

**Diversity, Inclusion and Equality in
Practice Placements: Experiences of
pre-registration student nurses with
dyslexia**

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Above all I wish to thank all of the student nurses with dyslexia who participated in my research study.

Finally my statement of enlightenment...I now know too much and nothing...

Dedication:

This poems dedicated to all the students I educate on the *scientific* technicalities, and fast pace of nursing. These combine with the important *art* of forming attentive human relationships and I expound that attention to basic details essential for worthwhile care...

The Pulse of Beds 2 and 3:

*Pumps drains tubes and stix,
monitor targets without any pleasure,
charts pills plans and drips,
document total and carefully measure.*

MI diabetes bed number two,
frightened and hungry; he could be you.
Ca.* dementia bed number three,
wet, dehydrated, she could be me.*

*Speak with Robert; he'll know you are kind,
the man in bed two, that's who you'll find.
speak up for Judie show that you care,
the girl in bed three; just over there.*

*Comforted Robert in bed number two;
reassured, nourished he could be you;
resting Judie in bed number three,
not thirsty or dirty, she could be me!*

© 2010 by Judie Knowles (Knowles, 2010b in Terry, 2010, p. 11).

* MI = Myocardial Infarction or heart attack

Ca. = Cancer

Abstract:

The study of the perspectives of student nurses with dyslexia has an under-represented knowledge base as this is a relatively new branch of nursing educational research. While researchers have suggested that those with dyslexia experience deficits of executive functionality within practice placements, one outstanding area for exploration is the student nurses' own lived-experience of the challenges faced in this context.

Using mixed-methods my study investigated this phenomenon. I replicated some earlier studies examining the students' perception of the practice mentor's provision for learning and student satisfaction with their clinical learning environment. My study's data showed that there was a perception of satisfaction with the quality of practice placements that were 'not boring.' There was apparently little difference in whether or not students look forward to 'going to shifts on practice placement' or perceive them to be a 'waste of time'. The environment was perceived to be 'very interesting' for learning. There was a perceived significant difference in mentor behaviour shown in support of the student's learning and toward them as a person the effect of this relationship was examined further.

I also explored interpretations of the students' own lived-experience of being a student with dyslexia in the practice placement context. A probing investigation into the impact of dyslexia within nursing practice found surprisingly high levels of psychological discriminative abuse (on issues relating to diversity, inclusion and equality), directed toward this vulnerable group of students. For the first time pragmatic constraints around reasonable adjustments were also revealed.

The thesis concludes that there is a role indicated for changes to normalise diversity, inclusion and equality with reasonable adjustments in the pedagogy practiced within practice placements. The thesis strongly suggests future work is needed to further eliminate discrimination within practice placement education of nurses.

1.0 Introduction:

In this chapter I introduce myself and explain my conceptual framework and I introduce the contents of this thesis report. I explain why I researched both the practice placement perceptions and the lived-experiences of a community of pre-registration student nurses with developmental dyslexia. Hereafter, I will refer to 'my phenomenon' and by this I mean: student nurses with dyslexia in the context of clinical practice placement learning environments, which will be referred to simply as 'practice placements'.

I am a nurse with 30 years' experience and registered as a stage-four lecturer/practice educator with the Nursing and Midwifery Council (NMC, 2008). I have worked as a senior lecturer in nursing at NMC approved (NMC, 2016a) higher education institutions (universities) in England for 16 years. My extensive *a posteriori* knowledge of nursing practice and education shaped the scholarly activities in my professional doctoral degree research study and thesis report.

The NMC 2020 review of the nursing curriculum (NMC, 2016b) will be piloted as a new education framework within a selection of universities from 2018. Alongside this the 2017/8 review of the NMC standards for mentors, practice teachers and teachers to support learning and

assessment in practice (NMC, 2008) into the new requirements for learning and assessment for all nursing and midwifery programmes (NMC, 2016c) is under consultation. As this thesis was produced in 2017 before the new standards were approved for use, reference throughout is made to the NMC (2008) terminologies:-

- stage-one: all registrants who teach but do not assess students in practice placements and this includes student mentors undertaking their initial stage-two mentorship education coursework
- stage-two: nurse mentors in practice placements
- stage-three: specialist community public health nursing practice teachers
- stage-four: university lecturers or senior practice-based educators

It is anticipated that in 2018 these terms will change from stage-one to “practice supervisor”; from stage-two/three to a nominated “practice assessor” and from stage-four to a nominated “academic assessor” (NMC, 2016c; NMC, 2017).

1.1 Why I focused on student nurses and practice placements

The United Kingdom (UK) three-year, full-time undergraduate Bachelor of Science honours (BSc. Hons.) nursing degree leads to nurse registration with the NMC. As nursing is a highly contextualised phenomena the 4,600 hour curriculum co-requisites are theory and practice elements (NMC, 2010). Half of the student’s course is theory and is delivered at the NMC approved university campus (NMC, 2016a)

over 45-50 weeks of the year, rather than the shorter academic year (Urwin *et al.*, 2010). This 50% of coursework, or 2,300 hours over three years (NMC, 2010), includes education on new nursing clinical skills in virtual clinical skills laboratories with assessment from stage-four lecturer/practice educators (NMC, 2008).

Students spend the remaining half of their coursework time in real clinical conditions on practice placements undertaking work-based practical hands-on learning (NMC, 2010). It is here that the functions of nursing and problem solving skills are learned through professional socialisation (NMC, 2015a). Clinical rotations into practice placement settings constitute patient, resident or service-user clinical environments in both the acute hospital trust and community. For example hospitals, surgeries, care homes or any other suitable community healthcare environment in which nurse registrants deliver care e.g. prisons, schools, children's day care and patient or service-users own homes (NMC, 2016a). The students' placements are largely within National Health Service (NHS) healthcare services but also include insight into clinical services provided by the private, voluntary and independent healthcare sectors.

Pre-registration nursing students on practice placements are full-time university students and the total amount of clinical practice over the three-year course is 2,300 hours (NMC, 2010). Within their practice placements they hold supernumerary status, meaning that they are not paid for the duration of their practice placement. Also this means that they are not included in the healthcare providers staffing establishment on the shift duty rota in terms of nurse-patient number ratios. Students attend for the equivalent of 37.5 hours workload per week in the clinical area during practice placement. The placements range in duration from two to 12 weeks, with shorter ones forming insight into the private, voluntary and independent sectors. Also shorter placements are allocated for insight into the other fields of nursing practice (i.e. an adult field nurse will have short insight placements into child and/or mental health field clinical practice settings and vice-versa).

On practice placements students have one-to-one support for their learning about clinical nursing practice along with practical assessment of competence in nursing skills from stage-two nurse mentors (Benner, 2001; NMC, 2008). Stage-two mentors are NMC registered nurses who have undergone additional training on an NMC approved mentorship preparation course (NMC, 2008) to support the pedagogy of nursing students in practice placements. A student from the university may be

the only student on placement or they may be allocated with peers from the same year of coursework or from preceding and subsequent years. Each stage-two mentor can mentor up to the maximum of three students at a time (NMC, 2008), but practice placements will not be inundated with students at any one time as the stage-four mentor undertakes educational audits on a two-year cycle (LSBU, 2016) and works with the healthcare sector management to agree local capacity within an annual quality monitoring process (Pan-London Practice Learning Group, 2016).

Practice placements are fundamental, multidimensional milieus for nurse education (Lewin, 2007). It is where students apply nursing theory to clinical practice by conducting actual patient care (Flott and Linden, 2016) under the supervision of their stage-two nurse mentor (NMC, 2008). Learning to be a nurse is complex (O'Donnell, 2011) it involves attaining a sound theoretical nursing knowledge base (NMC, 2010) whilst providing care with effective nurturing and compassion (Cummings and Bennett, 2012) coupled with essential technical nursing skills (NMC, 2010; Dougherty and Lister, 2015). On practice placements students apply or integrate underpinning knowledge (Bloom, 1956), affective patient-centred approaches (Kratwohl *et al.*, 1964) and psychomotor clinical skills (Simpson, 1972), as was taught by their stage-four lecturer/practice educators (NMC, 2008) in theoretical parts of

the curriculum (Newton *et al.*, 2010). The *a posteriori* knowledge and understanding for future nursing practice is developed with active critical reflective thinking occurring during and post-experience (Schön, 1987).

It is within their practice placement that students gain clinical skills competence (Benner, 2001) to become a registered nurse (NMC, 2010) and learn about complex chronic and acute disease management (Willis, 2015) become accountable to the NMC (2015) to work responsibly within contracts of employment with healthcare providers such as the NHS. Nursing is an academically intense and psychosocially engaging university course (NHS-HEE, 2017).

Learning in the classroom and nursing practice placement environment is context related and interdependent (Dougherty and Lister, 2015) as reflected in the structural 50% theory and 50% practice blended curriculum (NMC, 2010). Practice placements are a collaborative enterprise between universities and the clinical environment healthcare service providers and between stage-two mentor and stage-four lecturer/practice educator relations (NMC, 2008). The pedagogy of practice placements is overseen by stage-four lecturer/practice educators from the university within 'Link-Lecturer' remits (Knowles, 2007; NMC, 2008). The practice placement setting involves

psychosocial and mentor-student interpersonal relation interaction factors along with a context bound organisational culture of healthcare (Cohen, Manion and Morrison, 2017). I believed that the facts on my phenomenon did not speak for themselves because knowledge is theoretically impregnated (Silverman, 2015) and I believe that student opinion can contribute to improving clinical learning environment (Papathanasiou, Tsaras and Sarafis, 2014).

Since there is an increased outward-facing customer focus in universities (Lomas, 2007) I have found that providing a personalised student experience in my Link-Lecturer role (Knowles, 2007; NMC, 2008) is an important aspect of my work (LSBU, 2009a). It is also acknowledged that practice placement contexts are an interface with a need to be strengthened through research (McLaren and Rowlands, 2009). I therefore decided on the single contextual focus of practice placements for my enquiry on my phenomenon for my research study.

1.2 How I arrived at my conceptual framework

I engaged with philosophical reading and thinking as research in human science was necessarily philosophical (Winch, 2008) and according to Ellaway (2016, p. 502) ideology was a “precondition of scholarship.” I took ideology to be a system of values and beliefs and I wanted this to

inform my conceptual framework. With conscious considerations, of my own *a priori* knowledge and philosophical thinking on my phenomenon of interest, I sought to uncover my own axiomatic values and beliefs.

According to Rokeach's theory (1973) values relate to ongoing beliefs, attitudes and behaviours and I considered my own values as desirable and preferred. I see these characteristics as part of how I perceive myself or my self-identity (Holland and Lachicotte, *in* Daniels, Cole and Wertsch, 2007) and my values and beliefs were indicators of what I held in high esteem which motivated my social and professional behaviours (Rassin, 2008). What follows here is my own assumptions as to what was desirable, important and ideological for gaining new theoretical knowledge about both student perceptions and lived-experiences from within practice placements.

Above all, I valued the students' own perceptions about their practice placements (Merleau-Ponty, *in* Cobb *translation by* Edie 1964) and I believed that I could examine this quantitatively using a survey enquiry (Hartas, 2015) [see 3.2.1]. Beliefs guide my actions and judgements (Geach and Holówka, 2012) and I believed that the students' own lived-experiences were of utmost importance. The nature of being or ontological philosophy was based in inquiry (Heidegger*, 1962) and I

believed that I could examine this qualitatively using interviews (Given, 2015) [see 3.2.2] meaning that I could find out how students experience the world of practice placements.

*From 1933 to the end of World War II, Martin Heidegger was involved, in varying degrees, with the Nazi party. I assert the merit of Heidegger's philosophical work despite his political stance.

In other words my research sought valid first-person subjective information from my participants for my own third-person interpretation of it [see 3.1.1]. Ideology has been a “constant thread through” my scholarly acts of doctoral research process (Ellaway, 2016, p. 502). My beliefs served to guide the methodological design for my practical mixed-method research approach (Andrew and Halcomb, 2009).

I wanted to discover information from the students’ own lived-experience and I believed that drawing on my experience strengthened my effectiveness as a researcher (Gelling, 2010). I was part of the researched world (Cohen, Manion and Morrison, 2017) and I placed value on the opportunity to undertake interpretative phenomenological analysis (Thorne, 2016) of complex issues within my specialist field (Rokeach, 1973) [see 5.2].

I recognise the importance of my self-identity and role (Holland and Lachicotte, *in* Daniels, Cole and Wertsch, 2007) for the interpretation of my data into meaningful information to synthesise new knowledge on my

phenomenon (Parahoo, 2014). As I was key to understanding my phenomenon (Rogers, 1969) I decided to maximise my own wisdom and inherent connections to nursing education in my research (Reiners, 2012). I was well-suited to this study as a phenomenological perspective on the life of my phenomenon is optimally researched by one who had a *posteriori* knowledge and understanding on all of the following: university nursing education, healthcare partner NHS organisations, practice placements with nursing practice and mentoring (Cohen, Manion and Morrison, 2017).

As my values and beliefs guide my actions and judgements (Geach and Holówka, 2012) I sought *a priori* knowledge and understanding on ontological phenomenology methodology (Heidegger, 1962) to deliver an interpretative approach to my qualitative research design (Parahoo, 2014). I considered my nursing educationalist *a posteriori* knowledge as instrumental to get things considered in a different way within the nursing education community and this motivated my research behaviour (Rassin, 2008).

To identify exactly what student perspective from within practice placements would form the basis of my research I examined my aims around the special focuses of my doctoral degree course; these were

‘sustainability, equality and diversity’ (LSBU, 2017). I recognised that I wanted to generate and report new knowledge with this focus that was worthwhile to the nursing community (FHEQ, 2008). I decided to research practice placement perceptions (Merleau-Ponty, *in* Cobb *translation by* Edie 1964) and lived-experiences (Heidegger, 1962) of a cross-sectional sample-group of people who held the shared characteristic categories of being pre-registration student nurses with developmental dyslexia who were studying within my local zone-one-inner-London higher education institution at London South Bank University (hereafter this is referred to as ‘LSBU’). I wanted to discover directly from my participants’ lived-experience what it actually feels like to be a student nurse with dyslexia in practice placement (Langdridge and Hagger-Johnson, 2013).

I have specific learning disabilities including developmental dyslexia and I was interested in the psychosocial constructs of it and I gained *a priori* knowledge about dyslexia for my research study [see 2.1]. As my methodological studies progressed I recognised the importance of my knowledge, understanding and expertise (McConnell-Henry, Chapman and Francis, 2009). As a stage-four lecturer/practice educator (NMC, 2008) I have an inherent connection with nurses’ perspective of practice placements. As a person with developmental dyslexia I also have an

inherent connection with students with dyslexia and I care about their welfare [see 3.3.3]. Whilst my participating students with developmental dyslexia provided descriptive data on that which was most important to them and what it actually felt like to be in practice placements, it was the application of my own *a posteriori* knowledge (McConnell-Henry, Chapman and Francis, 2009) that enabled my interpretative phenomenological analysis, synthesis and evaluation of my data into new knowledge about my sample-groups experiences (Thorne, 2016) [see 5.2].

The conceptual framework for my primary research was for a mixed-method enquiry (Hay, 2016) into my phenomenon which I cared to understand (van Manen, 2016). My open research question was: - what is it like being a student nurse with dyslexia on practice placement? My research purpose was to illuminate my phenomenon, so I decided to explanatorily enquire on the nature of being and therefore my qualitative research was guided by interpretative ontological phenomenology methodology on lived-experience and what it means (Heidegger, 1962) [see 3.0 and 3.1.1].

1.3 Students with developmental dyslexia

This was not a study of students with ‘alexia’ or ‘acquired dyslexia’ where function has been lost through brain injury or diseases such as stroke and dementia (Woollams, 2014). It was an inquiry into students with heritable ‘developmental dyslexia’ (Scerri and Schulte-Körne, 2010). This chronic condition is innate and intrinsic in humans [see 2.1.3]. It is universally identified across languages in which letter graphemes were made up to be associated with phonemes (Snowling and Melby-Lervåg, 2015) [see 2.1.5.3] and it is an incurable, persistent lifelong condition (NHS Choices, 2015a).

Unlike the uniform characteristics of intellectual disability there are specific group cognitive profiles characteristic of developmental disorders (Ramus and Ahissar, 2012). These are grouped and termed together internationally as ‘specific developmental disorders of scholastic skills’ (WHO, 2016) [see 2.1]. In the UK these are termed ‘specific learning disabilities’ with use of the acronym SpLD (British Dyslexia Association, 2017). Developmental dyslexia is comorbid with other SpLD neurodevelopmental disorders (Tasman *et al.*, 2015) but these were outside the remit of my study. Many of these disorders have different aetiologies and my study seeks to understand the unique psychosocial dynamics and effects experienced by students with

developmental dyslexia. Hereafter, developmental dyslexia is referred to as 'dyslexia'.

1.4 My aims and objectives

I aimed to identify something worthwhile (van Manen, 2016) and as a professional doctoral student my enquiry set out to be practical, I did not set out to uncover the “way things are and should remain” (Meighan and Harber 2007 in Ellaway, 2016, p. 502). My aim was not to note regularities but to explain and seek reasons for them (Smeyers, 2006). With the outlook of a practical theorist (Marrow, 1977) and as someone in a position to effect professional changes (Dewar, 2016) I aimed to translate my research results and findings into the actual practices of student nurse mentoring (Chesla, 2008; NMC, 2008).

I aimed to yield results and findings which would bring about change by encouraging other like-minded mentors and nurse educators to uphold article 14 in the Human Rights Act (Europe. Human Rights Act, 1998) and to challenge discrimination to reduce inequalities and advance equality (Great Britain. Equality Act, 2010) [see 5.2]. This “way things should be” ideology called for sweeping reforms to address any shortcomings and deficiencies of pedagogical practices (Meighan and Harber 2007 in Ellaway, 2016, p. 502) [see 8.1]. A further aim of my

research was for the creation of new knowledge of a quality to satisfy peer review (FHEQ, 2008). I made plans to speak about my results and findings working locally with nursing mentors (NMC, 2008) and university educators to disseminate my thesis.

I undertook my independently-led research study to enter the world of my phenomenon and to discover the wisdom, possibilities and understandings (Polit and Beck, 2012) with the following objectives:-

- to collect primary research data from a local one-sample group that described the perceptions of student nurses with dyslexia on how satisfied they were with the practice placement environment and how satisfied they were with the mentor support for their learning
- subgroup collection of first-person data on concealed or hidden lived-meanings of common-place taken-for-granted everyday psychosocial and cultural constructs on the quality of the practice placement environment and the quality of mentor support for learning
- from the group-participant worldview use interpretative phenomenological analysis to construct world meaning by embedding my own *a priori* and *a posteriori* acquired wisdom as a nurse educationalist and researcher who has dyslexia
- generate new theory for a profound and detailed understanding of the consciously and meaningfully lived everyday experiences (van Manen, 2016) on what it was actually like and how it actually felt as a student nurse with

dyslexia “being-in-the-[natural]world” (Heidegger, 1962, p. 33) of practice placements

- for my research to be transformative (Mertens, 2009) with a call for new possibilities within the national policy of nurse education (NMC, 2016b&c) whereby mentorship practices in the practice placements become increasingly diverse, inclusive and equitable (NMC, 2008; NMC 2017)

As a ‘R1: first-stage researcher’ (European Commission. HORIZON-2020, 2017) I wanted to develop a resource that enabled me to communicate my ideas and conclusions clearly and effectively in presentations to both healthcare educationalists and non-specialist audiences (FHEQ, 2008). I plan to publish my research in peer reviewed journals and speak publically to be contributory in establishing a different way by working with healthcare, nursing and disability rights stakeholders including: NHS England; NHS Employers; NHS Clinical Commissioning Groups; Healthwatch; Health Education England; Nursing and Midwifery Council; Royal College of Nursing; Equality and Human Rights Commission and the Minister for Neurodiversity and Disability Rights UK [see 8.1]. This range of outcomes and audience interest left me with an important decision to make on my actual style of writing within my thesis. This was because my potential readership is wide and holds differing needs.

As I believe that my employers' investment into my professional doctoral degree was purposefully for me to attain a qualification in relation to my existing employment (Jackson *et al.*, 2011) I exacted on the notion of writing my thesis as a resource for my nursing pedagogy. Therefore my thesis was purposefully styled and contextualized as an exemplar resource for teaching my students [see Table 1]. This approach has meant that my thesis developed into a detailed account of my research activities with a view to this being a beneficial resource to my future supervisees. By this I mean that within my employment as a nurse educator I will soon begin to supervise level eight doctoral degree students (FHEQ, 2008) in addition to my workload of supervising nursing students completing their level six BSc. (Hons.) undergraduate degree (NMC, 2010) and level seven Master's degree dissertations (FHEQ, 2008).

Curriculum element and (degree level)	Conceptual pedagogy usage	Exemplar sections of my thesis
Literature review (6; 7 & 8)	A step-by-step example on how to undertake a systematic literature review and detailed examination of study limitations using CASP tool	2.3 & 6.0
Ethics (6; 7 & 8)	Ethical considerations in human science research	3.3
Methodology (7 & 8)	Philosophical underpinnings of quantitative and qualitative paradigms and using mixed methods in research with a focus on phenomenology	1.2; 1.5; 3.0 & 3.1
Sampling (7 & 8)	An example of defining a research sample	3.4; 4.1 & 4.3
Methods (7 & 8)	Survey and interviews as examples of instrumentation and pilot study	3.2
Data collection (7 & 8)	Step-by-step process of e-survey and one-to-one interview data collection	3.5
Analysis (8)	Detailed step-by-step descriptive statistical analysis process and detailed interpretative phenomenological analysis procedures	4.2 & 4.4
Results and recommendations (8)	How to synthesise quantitative results and qualitative findings and identifying the need for practice development	5.1; 5.2 & 8.0
Conclusions (6, 7 & 8)	How to summarise the salient points	9.0
Mentorship (6 & 7)	Learning about dyslexia as an example of student diversity	1.3; 2.1; 5.1; 8.0 & 9.0
Doctoral degree (8)	Step-by-step process	All

Table 1 - conceptual framework for pedagogic application of thesis

1.5 My research process

In this thesis I present my mixed-method (Andrew and Halcomb, 2009)

[see 3.0] research results [see 5.1] and findings [see 5.2] from my independently-led, primary research study that used a survey method to explore a sample [see 3.4.3] of nursing students' perceptions of their practice placements (Merleau-Ponty, *in Cobb translation by Edie* 1964). Interviews were used to explore the lived-experiences in practice placements of a sub-group of these students (Heidegger, 1962).

The NMC standards of mentorship (2008) should assure equality for students in practice placements (Smeyers, 2006). I wondered whether or not students with dyslexia experienced an equitable practice placement environment, meaning that I wanted to find out what it was like being mentored in relation to a dyslexia deficit [see 2.1]. Local mentoring practices may contribute to, and signify the quality of the student's experience and I wanted to know what these were. For example, was the mentoring pedagogy experienced diverse and inclusive (LSBU, 2017)? Therefore I wanted to examine contextual features of my participants experience in relation to my phenomenon and the other influences of diversity and inclusivity (Matua and Van Der Wal, 2015).

I wanted my research to explore what was most important to my participants. I studied their behaviour as psychosocial experience and the problems arising from it (Cohen, Manion and Morrison, 2017). I wanted to understand why they feel and behave the way they did (Hartas, 2015).

The methods that I used for data collection were survey and interview. My survey was undertaken through the issue of a questionnaire created using Google® Docs™. I prepared Chan's 42 'actual' and 42 'preferred' questions (Chan, 2001) from his 'clinical learning environment inventory' (Chan, 2001) [see 2.2 and see 3.2.1] into an e-format (Knowles, 2010a) to collect my data. Hereafter, Chan's (2001) 'clinical learning environment inventory' was referred to as 'Chan's questions'.

I recruited a convenience sample (Cohen, Manion and Morrison, 2017) of 64 volunteer participants from the population of 126 student nurses with dyslexia [see 3.4] I asked the students to complete my descriptive e-survey (Knowles, 2010a) [see 3.5]. I was interested in students' actual perception (Merleau-Ponty, *in Cobb translation by Edie* 1964) of their stage-two nurse mentors' (NMC, 2008) support of their learning and their perception of satisfaction with the practice placement environment (Salamonson *et al.*, 2011). My participants answered each of my

questions with one of four options: strongly agree/agree/disagree/strongly disagree [see 3.2.1].

I selected the same 19 of Chan's questions (2001) previously used by fellow nurse researchers' psychometric enquiry (Salamonson *et al.*, 2011) [see 2.2.2]. I applied a Dr. Rensis Likert-scale (Likert, 1932) [see 3.2.1] and I undertook descriptive statistical quantitative analysis of my data and interpreted inferences from it (Abbott, 2016) using the International Business Machines Corporation® (IBM®, 2016) Statistical Package for Social Sciences 20® (SPSS 20®) [see 4.2]. I reviewed primary research literature [see 2.2] and compared my results to studies that had also used Chan's questions (2000; 2001) [see 2.2 and 5.1].

Furthermore I wanted to enquire as to what it actually feels like to be a student nurse with dyslexia in practice placements [see 3.1.1]. So I invited all of the 64 students who had completed my e-survey (Knowles, 2010a) to discuss this in a one-to-one interview with me, and eight students did this [see 3.5]. I wanted to ask the students about the learning experiences that they had with their mentors within practice placements. I also wanted to give my participants the opportunity to say anything else they thought important when it came to discussing their experiences on my phenomenon.

Each student constructed meaning of their practice placement lived-experience according to their own identity and context (Guest, Namey and Mitchell, 2012) [see 3.5.2]. My research aimed to collate and showcase these individual detailed accounts and get some sense of what it actually feels like being a student nurse with dyslexia in practice placement (Reiners, 2012) [see 5.2.4].

I organised my transcribed interview datum-sets onto a Microsoft® Office Excel™ 2013 (Excel™) spreadsheet. I familiarised myself with my participants' experiences by repeatedly reading them and listening to the audio-recordings of my participants speaking at our interviews multiple times (Braun and Clarke, 2013). During this process I developed a 'concept-book' notebook of key issues that I noticed in my data (Brenner, Brown and Canter, 1985) [see 3.1]. I used my 'concept-book' to undertake meticulous "initial noting" on my data on Excel™ spreadsheet (Microsoft® Office™, 2013) one datum item at a time and annotating brief commentaries. I was also seeking emergent themes to add to my 'concept-book' and look for further occurrences of these in each of my participants' datum-set and my sample-group data-sets (Braun and Clarke, 2013, p. 202) [see 4.4].

I analysed the subtle nuances and intricacies of my participants first-person lived words and their verbal expressions of this (Willig, 2013) thereby I focused on my participants' use and meaning of language in describing their experience (Schleiermacher, *translation* by Bowie, 1998). I utilised my third-person conceptual interpretations noting what I thought my participants' experience was about (Braun and Clarke, 2013). Thus I employed interpretative phenomenological analysis and I searched for connections across the themes from within each datum-set (Thorne, 2016). I undertook this with all of my participants' datum-sets and then I identified themes and subordinate themes by counting the occurrences of these across my whole sample-group data-set (Braun and Clarke, 2013) [see 4.4]. By employing this method I interpreted my data into meaningful information including key themes and areas from within the realm of social justice from my doctoral degree on diversity, inclusion and equality (LSBU, 2017). I made inferences about understanding the lived-experience of these students (Braun and Clarke, 2013) [see 5.2]. I reviewed primary research literature to compare other researchers' findings with my own [see 2.3] and sought out the new knowledge that my study had generated. My study illuminated general issues of social justice (LSBU, 2017) [see 2.1.7.2] by looking at some specific pedagogic issues (Denscombe, 2014) of diversity [see 5.2.1], inclusivity [see 5.2.2] and equality [see 5.2.3].

2.0 Literature reviews:

In preparation for conducting my study I recognised that I did not have a *priori* knowledge on dyslexia from published literature. What I had was a *posteriori* knowledge and understanding on developmental dyslexia derived from my own inductive reasoning as a result of my own life of lived-experience (van Manen, 2016). In this chapter I examine some recent research studies that have explored the causational factors, and also those that have explored the multiple functional deficits of dyslexia [see 2.1.3-to-2.1.8]. I undertook a search for, and analysis of, all of the research studies that have used Chan's questions (Chan, 2000; 2001) [see 3.2.1] as a survey instrument for data collection on the student's perceptions about practice placements [see 2.2.2 and 2.2.3]. I additionally search for and systematically review all of the post-millennia research studies on the practice placement experience of student nurses with dyslexia [see 2.3.2]. Collectively these three activities involved a systematic acquisition and understanding of a substantial body of knowledge (FHEQ, 2008).

The aim of my literature review was to discover the existing research knowledge on dyslexia and the perception and experiences of student nurses with dyslexia. These objectives were threefold. Firstly it enabled my understanding on the research evidence-base about dyslexia as a

neurological [see 2.1.3; 2.1.4 and 2.1.6] and psychological SpLD disorder [see 2.1.5]. This approach to knowledge acquisition is a professional strategy to “always practise in line with the best available evidence” (NMC, 2015a, p. 7(6)) and 6.1 “make sure that any information...is evidence-based” (NMC, 2015a, p. 7(6.1)).

This first objective generated my comprehensive new and well-informed understanding of dyslexia. I was subsequently equipped to contextualise the ‘substantial disadvantage’ (Great Britain. Equality Act, 2010, s.212(1)) experienced by some student nurses with dyslexia within practice placements. This was consequently deployed to explain why student nurses with dyslexia in my own research study felt and behaved the way they did (Hartas, 2015) [see 5.2].

My second objective was to analyse all of the research results of studies that have used Chan’s questions (Chan, 2000; 2001). This formed a basis for synthesis of my own quantitative data into my descriptive theory [see 5.1 and 5.1.2.1]. My third literature search objective was to undertake a systematic literature review of all of the post-millennia primary research studies that have examined practice placement experiences of student nurses with dyslexia. This enabled me to identify the gaps in existing knowledge (FHEQ, 2008) [see 2.3.3] and these

findings were utilised to inform my own unique doctoral degree research enquiry. The outcome of these learning activities also provided the existing knowledge base for the understanding of my own qualitative data and synthesis of interpretative theory [see 5.2]. The second and third objectives enabled me to clearly frame the new knowledge that I generated [see 5.2].

2.1 Research on dyslexia

As it is beyond the boundaries of my doctoral degree study, this section is not a systematic review of the literature on dyslexia (Higgins and Green, 2011) or meta-analysis of study results (Deeks, Higgins and Altman, 2011) or meta-summary of the data (Sandelowski *et al.*, 2007). Instead I sought to provide myself with transdisciplinary nuances from a substantial body of knowledge (FHEQ, 2008). Therefore this first section of work involved me engaging in a novel activity of processing extensive up-to-date multidisciplinary research literature that underpins the World Health Organisation ICD - 10 classification of dyslexia (WHO, 2016) [see Table 2].

World Health Organisation ICD - 10 classification of dyslexia (WHO, 2016)		
Chapter V:	Mental and behavioural disorders (F00 - F 99)	
Block: F80 - F 89	Disorders of psychological development	<i>Disorders included in this block have in common: (a) onset invariably during infancy or childhood; (b) impairment or delay in development of functions that are strongly related to biological maturation of the central nervous system; and (c) a steady course without remissions and relapses. In most cases, the functions affected include language, visuo-spatial skills, and motor coordination. Usually, the delay or impairment has been present from as early as it could be detected reliably and will diminish progressively as the child grows older, although milder deficits often remain in adult life</i>
Code: F81	Specific developmental disorders of scholastic skills	<i>Disorders in which the normal patterns of skill acquisition are disturbed from the early stages of development. This is not simply a consequence of a lack of opportunity to learn, it is not solely a result of mental retardation, and it is not due to any form of acquired brain trauma or disease</i>
Category: F81.0	Classification: Specific reading disorder Index: Backward reading; Developmental Dyslexia; Specific reading retardation	<i>The main feature is a specific and significant impairment in the development of reading skills that is not solely accounted for by mental age, visual acuity problems, or inadequate schooling. Reading comprehension skill, reading word recognition, oral reading skill, and performance of tasks requiring reading may all be affected. Spelling difficulties are frequently associated with specific reading disorder and often remain into adolescence even after some progress in reading has been made. Specific developmental disorders of reading are commonly preceded by a history of disorders in speech or language development. Associated emotional and behavioural disturbances are common during the school age period</i>

Table 2 - WHO classification of dyslexia

2.1.1 My strategy

The strategic aim was to acquire and understand knowledge that is at the forefront of dyslexia (FHEQ, 2008). I used a systematic approach, as advocated by Aveyard (2014) to search and obtain peer reviewed published primary research literature. My search was conducted through seven university library catalogue electronic resources [see Table 3]. I selected these to yield multidisciplinary primary research on dyslexia from a range of professions. This non-adversarial approach is based on listening to theoretical viewpoints other than just from a nurse educationalist's perspective. This is a professional strategy to "work cooperatively" (NMC, 2015a, p. 8(8)) and "respect the skills, expertise and contributions of colleagues" (NMC, 2015a, p. 8(8.1)) of mine within

the wider multidisciplinary healthcare education and academic communities that I belong.

My aim was to form a conceptual framework by examining a unifying account of the evidence-base from the published primary research of multiple monolithic entities. This offered me a very broad knowledge base and enabled a considerably different understanding and unique interpretation of the collective evidence-base in this thesis than from that which I sourced from any one professional discipline.

Library catalogue electronic resource	Available from
Educational Research Information Center (ERIC)	https://eric.ed.gov/?journals
Electronic Journals Service (EJS)	http://ejournals.ebsco.com/
Medline	https://www.nlm.nih.gov/
Routledge, Taylor and Francis	http://www.tandfonline.com/
Science Direct	http://www.sciencedirect.com
Scopus	https://www.scopus.com/
Wiley	http://onlinelibrary.wiley.com/
Totals	Seven sources

Table 3 - university library catalogue electronic resources searched [2.1]

My search inclusion criteria consisted of articles published in English that were directly related to the key words ‘developmental dyslexia’. To narrow the literature down I conducted an advanced search where ‘dyslexia’ was required in the article title plus ‘developmental’ was required in the article abstract. I also set date limits of 2006 -to- 2016 to source academically acceptable contemporary literature. When I attained the abstracts I filtered these into those which were peer

reviewed primary research publications, and these were the articles I read.

To avoid a historical perspective and conversely ensuring the inclusion of only the latest information to inform my evidence-based enquiry I read the articles from present year back. This is a professional strategy to “keep [my] knowledge...up to date” (NMC, 2015a, p. 17(22.3)). These literature collation and reading exercises enhanced my evaluation of current research study results to define the known root causes and manifestations of dyslexia and served to heighten my own *a priori* knowledge before commencing my research enquiry (Rogers, 1969).

2.1.2 My literature review on dyslexia

Dyslexia, as a hidden disability is a neurological long-term condition (Great Britain. Equality Act, 2010). It is a complex multifactorial disorder (Bishop, 2015) of cerebral mal-neurodevelopment (Whitaker, 2010) occurring during the gestational formation of the central nervous systems *in utero* (Platt *et al.*, 2013). Several deficits cause the full clinical phenotype of dyslexia (Peterson and Pennington, 2012) [see 2.1.3 -to- 2.1.6]. In most individuals dyslexia occurs on a continuum of severity and the signs, symptoms and executive function [see 2.1.8] vary considerably in the extent. The heterogeneity of dyslexia holds problems

with phonology deficit with difficulty spelling [see 2.1.6.1.1], whilst others have multiple deficits with the addition of an auditory processing deficit [see 2.1.5.1] plus or minus visual-spatial perception deficiency [see 2.1.5.2] plus or minus verbal articulation disorder (Rayner *et al.*, 2012) [see 2.1.5.3]. Difference in the manifestation of behavioural symptoms is due to sub-sets and severity of the condition. The newest opinion requiring further research was on the neurochemistry of the neurotransmitter Glutamate within a “neural noise hypothesis” although this lacks a fit with the features of structural connectivity of the brain (Hancock, Pugh and Hoeft, 2017, p. 434) [see 2.1.4]. The multidisciplinary literatures I have sourced from the scientific community reiterate that a complete and agreed totality of theorising on what developmental dyslexia actually is remains largely unknown.

2.1.2.1 Prevalence

People with dyslexia are a minority in UK society with estimated numbers around one in every 10-20 people or 5-10% of the population (NHS Choices, 2015a). Prevalence estimates depend on whether the diagnostic thresholds are relative to age or intelligence quotient (IQ) [see 2.1.5]. When both discrepancies are taken into account (thus excluding individuals who have the uniform characteristics of intellectual disability [see 1.3]) approximately 7% of the population is actively identified as

having dyslexia (Peterson and Pennington, 2012). Estimates for SpLD prevalence data come from either educational establishments from metrics on their student population e.g. HESA (2010) or from researchers' localised data-sets.

Increased male prevalence of neurodevelopmental disorders was reported (Jacquemont *et al.*, 2014) in researchers' data. For example a representation male-to-female ratio of 2.68:1.0 in autism spectrum disorder was recorded in a study by Garg *et al.* (2016). Similarly in Scotland students receiving special support for dyslexia represented a male-to-female ratio of 3.0:1.0 (Scottish Government report 2007, *cited in* Riddell, 2009, pp. 283). However, research studies render gender prevalence of dyslexia as problematic. In the field of neuroscience the male-to-female ratio of studies was disproportionately higher with a male-to-female ratio of 5.5:1.0 subjects or participants (Beerya and Zucker, 2011). The literature I sourced shows that dyslexia is underdiagnosed in females (Rayner *et al.*, 2012) [see 2.1.7] and that females deserve more neurodevelopmental study (McCarthy *et al.*, 2012) [see 6.1 and 8.2].

It has been estimated that as much as 20% of the population might have dyslexia (International Dyslexia Foundation, 2017) and 7% (Peterson

and Pennington, 2012) is possibly an under-representation of the prevalence of the condition in the UK. Notably data from HESA (2010) represents only those who were pursuing higher education rather than wider society. I think that prevalence would be more accurate if first-degree relatives of each person holding a positive diagnosis were also screened for diagnostic testing.

2.1.3 Neurogenetics

Genes have broad phenotypic effects in SpLDs (Paracchini, 2011) and dyslexia has a genetic aetiology but there is no single gene determining this neuromorphogenesis condition. There are 10 genetic factors thus far identified as associated mutations (Kere, 2014). Genome-wide association studies identified nine risk loci DYX1 - D YX9 (McGrath, Smith and Pennington, 2006). Further studies focusing on associations between genetic variations identified candidate dyslexia susceptibility genes (Scerri and Schulte-Körne, 2010). Initially six candidate genes (Kere, 2011) were identified and these were followed by four more (Scerri *et al.*, 2010). Some of these candidate genes were also found to have shared impairment traits with language (Scerri *et al.*, 2010), reading (Scerri *et al.*, 2011) and auditory phoneme processing (Neef *et al.*, 2017). This is because there is a genetic basis for the scaffolding for literacy in human behaviour (Ellis, 2016). The heterogeneous cognitive

fingerprints coupled with differential brain activation patterns [see 2.1.6] characterise groups of people with dyslexia (Heim and Grande, 2012).

However a cross-linguistic eight-nation European study by Becker *et al.* (2014) shows that the molecular mechanisms leading to dyslexia are poorly understood. This is because many genes act probabilistically (i.e., polygenicity) with each mutant gene having only a very small contributory effect to the complex aetiology of dyslexia (van Bergen, van der Leij and de Jong, 2014). It therefore makes sense that neuropsychological studies reveal distinctive subtypes of dyslexia. Dyslexia can be peripheral reading impairments with deficits in orthographic-visual analysis or central with reading impairment in the later stages of the lexical and sub lexical routes [see 2.1.5.2].

Although Hämäläinen *et al.* (2013) state that 30-50% of people with dyslexia have auditory problems, the commonest problem was shown to be a phonological awareness deficit¹ that manifests with an above dyslexic average auditory processing function (Heim *et al.*, 2008). This subtype deficit was termed 'auditory dyslexia' (Myklebust, 1965) or 'dysphonetic dyslexia' (Boder, 1970). This phonological singular dyslexia deficit does not include impaired magnocellular functioning (Heim *et al.*, 2010a).

Large numbers of people with dyslexia have a magnocellular singular dyslexia deficit which is a visual attention span deficit² (Vidyasagar and Palmer, 2010) and some have this in conjunction with a phonological deficit (Lobier, Zoubrinetzky, and Valdois 2012). Johnson and Myklebust (1967) termed the visual attention span deficit² 'visual dyslexia', Boder (1970) termed it 'dyseidetic dyslexia' and Shallice and Warrington (1980) termed it 'attentional dyslexia' that is sometimes referred to as letter position dyslexia. Phonology¹ and visual attention span² modulate the reading network in dyslexia (Heim *et al.*, 2010b) and account for the single-deficits and double-deficit theories of dyslexia (Wolf and Bowers, 1999).

The phonological awareness deficit¹ and the visual attention span deficit² as separable deficits may exist with or without the other and are two independent contributions to different kinds of learning disability. The phonological awareness deficit¹ and difficulties with spelling is different from the visual attention span deficit² with impairments in visual naming speed with a persistent slow reading speed (Torppa, Georgiou, Salmi, Eklund, & Lyytinen, 2012).

There are a much smaller number of people with dyslexia who are challenged with what I suggest could be termed 'dystriplicity dyslexia' as

it comprises the ‘auditory processing+phonological¹ network’ and ‘visual² network’ as well as the ‘verbal³ network’ thus in addition to a double deficit it includes a third verbal articulation deficit³.

Dyslexia subtypes account for the heterogeneity of symptoms or deficits experienced by people with dyslexia. For example there are some dyslexic non-responders in remediation intervention in phonological reading instruction (Lorusso, Facoetti and Bakker, 2011) because they have a single-deficit of a visual attention span deficit². The ‘dystriplecity dyslexia’ subtype combination possibly accounts for the 5% of results where dyslexia deviates from the general pattern of phonological awareness deficit¹ with or without visual attention span² deficit (Tops *et al.*, 2012).

Throughout this literature review I have found that the research studies all rely on unselected subtype groups from the population with dyslexia and my study was no exception [see 3.1 and 6.2].

2.1.3.1 Heritability

Dyslexia is a familial disorder as rates of impairment are elevated in first-degree relatives (parent and/or sibling) of those affected (Snowling and Melby-Lervåg, 2015). Having a close relative with reading problems is a

high risk factor for dyslexia as genes are an important factor at $\geq 60\%$ (Kirkpatrick *et al.*, 2011), in influencing whether or not a descendant is a poor reader. The population prevalence of 5 - 10% heritable risk factors associated with language impairments raises to 30 - 50% in first-degree relatives of affected individuals (Barry, Yasin and Bishop, 2007).

Behavioural genetic research shows that the single-deficit of phonological awareness¹ or a single-deficit of visual attention span² are heritable (Samuelsson *et al.*, 2007; Petrill *et al.*, 2010) but the mechanics of heritability for dyslexia remains unexplained. Genetic research work is ongoing and may eventually lead to replacing psychology's diagnostic behavioural testing [see 2.1.7] with biological testing (Holger *et al.*, 2010).

2.1.4 Neuroanatomy

Neuromorphological abnormalities rooted in early developmental migrational problems and resultant neuroanatomical encephalon (brain) differences are the hallmark of dyslexia (Peterson and Pennington, 2012). There is difference in the microstructure of the left-lateralised cortical network white matter (Stoodley *in* Mariën and Manto, 2015) in the inferior frontal gyrus; posterior/inferior temporoparietal and occipitotemporal regions (Eden *et al.*, 2015). These network systems are located within the left hemisphere of the encephalon. The left

occipitotemporal encompasses the visual word form area (VWFA) in the fusiform gyrus (Varvara *et al.*, 2014) and connectivity of high-level visual sensory modalities for the conceptual representations of language (Price and Devlin, 2011). The size of the left primary visual cortex in the occipital lobe (V1) is correlated with performance in tasks involved in selective spatial attention (Verghese *et al.*, 2014) and perception of visual illusion of object size (Schwarzkopf, Song and Rees, 2011).

Predominantly under the cerebral cortex (grey matter) of the encephalon (Patton and Thibodeau, 2015) white matter is composed of cells called axons (Rizzo, 2015) which are myelinated meaning that they are covered in the white fatty protein myelin. These nerve fibres form synapse connections between nerve cells within the cerebrum and different areas of the encephalon and spinal cord (Pannese, 2015).

Neuroimagery of those with dyslexia shows anatomical difference including the gyral window meaning the white matter depth as it is wider with longer intrahemispheric and interhemispheric corticocortical long-range global connectivity and a deficit in very short-range local and horizontal synapse connectivity to the grey matter (Casanova *et al.*, 2010). This manifests as a disconnection syndrome involving multiple areas of the encephalon (Aminoff and Daroff, 2014) [see 2.1.8]. There is

also reduced volume (18%), morphology and location of the lateral geniculate nucleus (Giraldo-Chica, Hegarty and Schneidera, 2015) which is the relay centre in the thalamus for the visual pathway (Faingold and Blumenfeld, 2013). In a study on female participants researchers found less grey matter volume in the right medial frontal gyrus/paracentral lobule and precuneus tentatively suggesting sex-anatomical difference of dyslexia in the encephalon (Evans *et al.*, 2014) [see 6.0 and 8.2].

2.1.5 Neuropsychology

Dyslexia is complex and multifaceted (Dymock and Nicholson, 2013) and is characterised as a specific neuropsychological deficit in linguistic auditory, visual and verbal functions (Reid, 2016). The behavioural disorder signs of dyslexia are literacy and communication problems [see 2.1.7]. Typical symptoms include arduous efforts and specific difficulties with learning due to problems with semantic and syntactic/morphological language skills (Pennington and Bishop, 2009). This phonological weakness is the most common symptom in dyslexia (Roberts, Christo, and Shefelbine in Kamil *et al.*, 2011). The grammatical structures of writing and spelling are also hindered by auditory processing/understanding disorder. This is comorbid with difficulty reading hindered by visual processing/understanding disorder. These auditory and visual

deficits may also manifest with the incorrect pronunciation of words (NHS Choices, 2015b). There is difficulty segmenting and manipulating spoken words with poor verbal short-term working memory and problems with lexical access, i.e. slow to remember and retrieve names of items and recalling numbers (Simmons and Singleton, 2008).

People with dyslexia are not ‘dense’, ‘dumb’, ‘empty brain’[sic], ‘spastic’, ‘stupid’, ‘thick’ or ‘not intelligent’ [see 5.2.2]. These words / terms are insulting. Dyslexia does not imply low intelligence (Snowling, Gooch and Henderson, 2012) [see 2.1; Table 2] and the condition is entirely unrelated to IQ (Tanaka *et al.*, 2011) as no significant differences were observed in tests of problem solving, fluid intelligence (Callens, Tops and Brysbaert, 2012) or reasoning (Tops *et al.*, 2013a). People with the dyslexia range from high intelligence quotient with IQ ≥ 140 to low intelligence quotient with IQ ≤ 70 scores (Wadsworth, Olson and DeFries, 2010). The significant neurodiversity element is that people with dyslexia demonstrate is being slower with crystallized IQ in terms of retrieving stored information from long-term memory (Callens, Tops and Brysbaert, 2012).

Dyslexia starts early *in utero* when neuromorphology of the neuroanatomical structures and language pathways begin (Whitaker,

2010; Platt *et al.*, 2013) and it is therefore a specific neurodevelopmental disorder of biological origin (Stoodley, 2016) [see 2.1.4]. The condition manifests as SpLDs or, as termed by Snowling (2013), specific scholastic learning difficulties [see 2.1.8].

2.1.5.1 Auditory processing disorder

The auditory nervous system pathway is of paramount relevance for human communication. It consists of the subcortical peripheral areas, responsible for maintaining the encoding integrity of simple and complex sound stimuli (Crossman and Neary, 2015), through to the central auditory cortical level for processing and interpretation of words (Lopez-Poveda, Palmer and Meddis, 2010). Dyslexia is not aligned with hearing impairment it is a term applied to people with normal peripheral hearing who have a specific difficulty with auditory sampling in speech-to-sound processing and perception of the spoken word (Peterson and Pennington, 2012). For example, imagine a shift handover [5.2.4.1] includes a patient with a tracheostomy tube in situ trachea (windpipe) for treatment purposes. The spoken polysyllabic word 'tracheostomy' (said as part of the shift handover of this patient) is formed of the five syllables /tra/che/os/to/my/ and the spoken word transmits five phoneme speech sounds which change rapidly in parallel/overlapping one another /treɪ/ki/ps/tə/mi/ so that each phenome is not individually clear as

together they form one interconnected word sound stimuli (Dymock and Nicholson, 2013). The processing of hearing sounds that change rapidly is controlled by the magnocellular cells forming the neural pathway via the medial geniculate (in the thalamus) to the cerebrum (Moore *et al.*, 2010a).

Auditory sampling involves encoding incoming information from spoken language at different frequencies (Goswami, 2011) and detecting and discriminating differences in phoneme/allophone speech sounds to decode and understand the word (Moore *et al.*, 2010b). This is matched to words stored from learning to read and write graphemes (letters) to phenomes (sounds) (Dehaene, 2009) in the Wernicke's area in the back of the superior temporal gyrus in the encephalon (Halpern and Goldfarb, 2013).

Impairment of auditory sampling in people with dyslexia has specific consequences for grapheme/phoneme sound associations and impacts cognitive phonological processing (Lehongre *et al.*, 2011) in the temporoparietal junction within the posterior parietal cortex. It is difficult for people with dyslexia to accurately interpret short segments of allophonic (subphonemic) and phonemic units of sounds (Serniclaes, Collet and Sprenger-Charolles, 2015) meaning that nonsensical

graphemes are frequent within the words heard. Resultantly the comprehension system fails to build or retain a fully specified representation for linguistic input (Christiansen and Chater, 2016). Underspecified representations lead to erroneous interpretations and the word is unrecognisable in the Broca's speech area in the inferior frontal gyrus (Augustine, 2017) thus perplexing the person with dyslexia.

To illustrate this a student nurse with dyslexia may sample and process the spoken word 'tracheostomy' during handover literally as 'takky·oz·tea·me' [see 5.2]. The impact of this on their cognitive phonological processing thinking may equate to the following experience; [what was it that I was being told that was] 'ta[c]ky' (i.e. sticky?) [What had 'The Wonderful Wizard of Oz' or Australia got to do with what was being said here] 'Oz' (i.e. the Emerald City/ Aus/Aussie?) [And was this person saying] 'tea' and 'me' (i.e. as in 'I') [therefore meaning they want a cup of tea?] and they swiftly realise that none of that makes sense! This was because they are constructing interpretations that reflect representative pragmatic knowledge of 'takky·oz·tea·me' rather than the grammatically licensed meaning based on the syntactic structure of a string of the input from the spoken word 'tracheostomy'. Clearly they feel perplexed and confused by the content of the information conveyed and received as they did not have the whole

word 'takky·oz·tea·me' in their Broca's area and they instead struggle to make some sense of word-parts within the whole word resulting in nonsensical communication (Augustine, 2017).

For people with dyslexia the decoding of this misinformation is compounded by a deficit in the temporary storage of verbal material (Menghini *et al.*, 2011). The student nurse cited above focused so hard on trying to make sense of the information 'takky·oz·tea·me', that the original spoken word 'tracheostomy' and phonemes /treɪ/ki/ps/tə/mi/ could not be recalled for the purpose of re-processing in the pursuit of decoding and understanding the actual word said.

Student nurses with dyslexia can be enabled within practice placements with a reasonable adjustment to use an audio recording device as the word 'tracheostomy' can be listened to repeatedly after handover until accurate decoding is achieved. Notably auditory processing becomes more difficult when listening to complicated healthcare information (such as the healthcare term 'tracheostomy') during handover [see 5.2.4.1]. This is exacerbated within both 'low signal' to 'low noise' ratios (Ziegler *et al.*, 2009) and 'low signal' to 'high noise' ratios (Inoue *et al.*, 2011) in the noise-filled practice placement environment.

In learning to spell words, for those with dyslexia, the phonological disorder distorts sound-to-spelling learning (Peterson and Pennington, 2012) [see 2.1.6.1.1]. Student nurses with dyslexia find it very difficult to spell correctly [see 5.2.4.3] as they have difficulty linking the correct phoneme (sound) to each grapheme (letter) (Dymock and Nicholson, 2013).

Use of phonemes when writing means that 'tracheostomy' could be incorrectly spelt something like 'treykeeostuhmee'. English spelling is highly nonphonemic (Westaway, 2014) for example 'ankle' may be incorrectly spelt within the patient's documentation as 'uncle' [see 5.2.4.3]. Auxiliary aids such as e-dictionary via mobile technology and provision of auxiliary service, where a colleague without dyslexia checks documentation and advises on spellings/punctuation for correction are reasonable adjustments [see 2.1.8.1] for the student nurse with dyslexia on practice placement.

Students find it particularly difficult to spell words e.g. 'tracheostomy' or 'ankle' out loud. Again this is because of the deficit in the temporary storage of verbal material (Menghini *et al.*, 2011) in the Wernicke's area (Halpern and Goldfarb, 2013). Keeping track when spelling each grapheme (letter) aloud for the former 12 letter word with five phonemes

sounds in 'tracheostomy' and even the much smaller latter five letter word with just two phoneme sounds 'ankle' is exceedingly difficult for the student nurse with dyslexia to do. If a mentor (NMC, 2008) were to intentionally make a student nurse (who has disclosed their diagnosis of dyslexia and highlighted the difficulties that they have with this) spell out loud e.g. publically during handover it could constitute a furtive overt act of disability discrimination (Great Britain. Equality Act, 2010).

2.1.5.2 Visual-spatial disorder

Specific visual difficulties in dyslexia are caused by an inability of the oculomotor nerve to control the six extraocular muscles (Vilensky, Robertson and Suarez-Quian, 2015) for rapid timing and accuracy of eye movements (Lallier *et al.*, 2010). This motion-sensing function is to keep the visual world stationary (Stein, 2014). A malfunction is identifiable at the very early stages of associative learning (Jones *et al.*, 2013) occurring before letter-to-speech sound integration applies (Zorzi *et al.*, 2012). Pre-readers, with familial risk of dyslexia, may be identified as having dyslexia through impaired visual-spatial attention testing (Facoetti *et al.*, 2010). Visual attention disorders are predictors of future reading acquisition skills controlling not only for age, IQ, and phonological processing, but also for non-alphabetic, visual-to-phonological mapping (Franceschini *et al.*, 2012).

Reading is a motion-awareness task involving conjugate movement of the eyes (Vilensky, Robertson and Suarez-Quian, 2015) which scan and are constantly on the move (Rayner, 2009). It also requires binocular and focused visual attention (Ruffino *et al.*, 2014) with good eye convergence control that is spatially concentrated as fixation pauses in a small portion of the visual field lasting on average 200 - 250 milliseconds per English word (Rayner *et al.*, 2012). In some people with dyslexia the gaze of the eyes slips with poor fixation (Bucci *et al.*, 2008) and there is impaired focused visual attention characterised by sluggish shifting and inadequate deployment to spatial location (Yeshurun and Rashal, 2010) with enhanced visual crowding (Callens *et al.*, 2013)

There is no deficiency in left-to-right processing of words in dyslexia but there is evidence for enhanced visual crowding resulting in reading difficulties (Ghassemi and Kapoula, 2013).

In people with dyslexia this poor eye convergence control or binocular disparity results in diplopia (double vision) when reading (Kirkby *et al.*, 2011) and trouble seeing difference in handwritten or typed letters (Dymock and Nicholson, 2013). This may be problematic when redirecting attention focus from one alphabetical letter onto the next one (Stein, 2014) or it could be for attention focus on the differential details

between adjacent letters (Jones *et al.*, 2008). Some confusing similarities between letter and numerical shapes are enhanced by particular font theme style and or spacing as illustrated [see Table 4].

Issue	Candidate letters/numbers	Font type exacerbation
Lower-case adjacent letters	ae ft il	æ ft il
Reversible letters	qp db bp dq nu JI	qp db bp dq nu Jl
Letters and numbers	3E 96 5S SZ Z7 Z2	3E 96 5S SZ Z7 Z2
Capital letters	BR BD DO OQ GO GC CO IJ JL MW UV	BR BD DO OQ GO GC CO IJ Jl MW UV

Table 4 - confusion between shapes of some letters and figures

A reasonable adjustment for student nurses with dyslexia in practice placements is to make available text in *Arial* theme font with larger between-letter expanded font spacing ‘like this’ and larger font size e.g. 14 with the lines double-spaced as is shown in my thesis. This text enables the reader with dyslexia to more readily distinguish between the similar shapes seen [see 8.1].

Reading involves serial processing of characters that make up words (Grainger, 2016) within 2° the foveal vision point of fixation or about six-to-eight characters of a word (Kornrumpf, Dimigen and Sommer, 2017) and the parafoveally vision belt (longer words or the next word) being 2-5° left-to-right seven-to-twelve characters of the current fixation (Bicknell and Levy 2010). People with dyslexia are affected by a deficit of rapid visual orienting and this results in the inability of the automatic attention system to disengage fast enough from one item to the next one, yielding slow, un-fluent and degraded accuracy of printed word recognition (O'Brien, Orden and Pennington, 2013).

In addition to the orthographic difficulties with the look of the word (Jones, Ashby and Branigan, 2013) there is also the decoding problem caused by phonological confusability with the sound of the word. These deficits give significant difficulty with reading acquisition (Lyytinen *et al.*, 2015). Visual-spatial research work is ongoing and may eventually lead to replacing psychology's behavioural testing [see 2.1.7] with diagnosis of dyslexia using eye tracking during reading (Nilsson Benfatto *et al.*, 2016).

English writing is a phonological code. Printed letters stand for phonemes relating to sounds in spoken words (Dymock and Nicholson,

2013). According to Nicolson and Fawcett (2008) learning to read requires 10,000 stimulus presentations and a person with dyslexia requires 100 times more, i.e., one million presentations. Words are decoded in two pathways of the cerebellum. (a) The sub-lexical route for correspondences between grapheme-to-phoneme (letter-to-sound) for reading unfamiliar words and pseudo non-words (Gori *et al.*, 2014). The sub-lexical phonological processing skill is required to learn to read and write (Tunmer & Greaney, 2010) and is deficient in those with dyslexia (Beidas, Khateb, and Breznitz, 2013). (b) The lexical route for lexical-semantic knowledge correspondences for reading familiar known words and irregular words (Friedmann and Coltheart, 2017).

Written word recognition is an executive function of the two-to-three second window of working memory (Varvara *et al.*, 2014) [see 2.1.8] and people with dyslexia are limited to fluent reading of words they recognise as a whole or orthography (Wang *et al.*, 2014). Those with dyslexia do not possess the precise phonetic representations of words for accurate word identification, and when reading are less able to give attention to higher levels of text comprehension (Hersch and Andrews, 2012).

Resultantly text needs to be read multiple times before comprehension of content can be attained. A reasonable adjustment [see 2.1.8.1] is to avail the use of text-to-speech software and to allow extra time for the

student nurse with dyslexia to understand documentation on practice placements.

A deficit in the temporary storage of visual-spatial material in those with dyslexia (Menghini *et al.*, 2011) ensures that reading remains “effortful and slow” (Shaywitz, Morris and Shaywitz, 2008, p. 453) and “often laborious” (Sheriston, Critten and Jones, 2016, p. 405). Students with dyslexia report significantly greater use of study aids and time management strategies for scholarly activities in comparison to students who do not have dyslexia (Kirby *et al.*, 2008).

Notably reading patient e-documentation, policy, procedure and guidelines [5.2.4.3] is a major function of student nurse activity in practice placements. A reasonable adjustment is to make available the auxiliary aid of text-to-speech software readily available in practice placements as written word decoding becomes more difficult when reading complicated healthcare information particularly within a noise-filled practice placement environment (Sperling *et al.*, 2005; Dole *et al.*, 2012).

2.1.5.2.1 Cerebellar subcortical visual system/pathway disorder

An area that is well researched is the bottom-up neuro-anatomical model of reading (Martin *et al.*, 2015). This comprises the feedforward sub-lexical route pathway V1→V5 from the primary visual cortex in the occipital lobe to the middle temporal gyrus at the occipital junction (Yoshor and Mizrahi, 2012). Here are the functions of the visual input to orthographic processing in accessing the corresponding phonological and semantic information (Davey *et al.*, 2016). The retinal ganglion cells are intrinsically photosensitive (Besharse and Bok, 2011) and consist of 10% Mcells or magnocellular cells and 90% Pcells or parvocular cells (Brazis, Masdeu and Biller, 2016). These all project to the lateral geniculate nucleus relay centre in the thalamus en-route to the primary visual cortex striate-V1 (Optical Society of America, 2010) situated in the back of the occipitaltemporal cortex (Waxman, 2016).

Pathway V1→V5 is where spatial visual information is projected by Mcells via the upper dorsal stream (Gunz *in* Kaas, 2016) to the visual motion-sensitive area in V5 (Riordan-Eva and Cunningham, 2011) and thence to the posterior parietal cortical angular and supramarginal gyri (Fitzgerald, Gruener and Mtui, 2012). This stream enables people to orientate to the world and objects and understand motion i.e. where one is and where things are in relation to ourselves e.g. left and right [see

5.2.4]. Deficits in visual-spatial attention in dyslexia have been found using tasks which evaluate orientation, focusing, shifting attention and visual search (Menghini *et al.*, 2010).

Mcells mediate visual guidance of attention (eye movement) that are highly specialised for timing visual events sensitive to flicker and movement. People with dyslexia show Mcell defects with reduced visual evoked potentials in rapidly moving stimuli presented at low contrasts (Schulte-Körne and Bruder, 2010). The lower contrast sensitivity (McLean *et al.*, 2011) means that they require more contrast to see (Gori *et al.*, 2014). Along with having low motion sensitivity, flicker sensitivity is reduced in people with dyslexia (Laycock, Crewther and Crewther, 2012). Flicker and movement actions are important for capturing attention and providing visual guidance for attention for eye and limb movement. In reading this was important for focusing visual attention very rapidly on letters and their order in words (Vidyasagar and Palmer, 2010). People with dyslexia have poor eye control during reading with longer fixations and more regressions to re-examine words that they have already read (Kirkby *et al.*, 2008). Mcells direct Pcells to each letter in order to identify it and its position in the world and this also guides hand movement when writing (Goodhew *et al.*, 2015).

Pcells identify and recognise and categorise what we see via the lower ventral stream i.e. clarity, colour, contrast, detail, shape, size (DiCarlo, Zoccolan and Rust, 2012). When a word is being read that is already in the readers visual lexicon its meaning can be rapidly grasped by direct connection to the visual word forming area (VWFA) in Broca's area which supplies meaning of words read and meaning of words spoken (Augustine, 2017).

The ratio of sensitivity of the upper dorsal stream system to the lower ventral stream system is much lower in those with dyslexia (Stein, 2014) meaning that they have a Mcell neural visual pathway impairment. A reasonable adjustment is to make available colour overlays for student nurses with dyslexia in practice placements. Yellow filters increase the amount of long-wavelength light falling on the retina hence stimulating Mcells more because the pupil dilates (Stein, 2014). Retinal ganglion cells contain the blue sensitive pigment melanopsin (Hankins, Peirson and Foster, 2008) and this activates the Mcells in the lateral geniculate nucleus (Stein, 2014).

The deficits people with dyslexia have with this bottom-up feedforward route is clear (Wimmer *et al.*, 2010). However recent study results also show that the left ventral occipito-temporal cerebral cortex (Waxman,

2016) acts as an interface linking visual form with nonvisual processing in both directions (Twomey *et al.*, 2011). Top-down feedback routes enable interactive processing of nonvisual aspects of visual word recognition when reading but it is not known whether this is compromised in people with dyslexia and further research is required [see 8.2].

2.1.5.3 Verbal articulation disorder

Humans speak before they progress to reading (Roskos, Mandel Morrow and Gambrell, 2015). Pre-readers with dyslexia have difficulties with the language processing skills of segmenting and manipulating sound patterns of spoken words in the inferior parietal lobe and are slower than their contemporaries in the development of phonemic sounds (Facoetti *et al.*, 2010) and have lower phonemic fluency (Smith-Spark *et al.*, 2017). Difficulties with phonemic sounds means that student nurses with dyslexia have a deficit in verbal phonological fluency (Ramus *et al.*, 2013). For example they may persistently mispronounce ‘oesophagus’ despite extensive effort to learn the correct pronunciation [see 5.2.4.1].

Phonemes are the smallest distinctive sounds in language (Dymock and Nicholson, 2013) and British English words contain allophones that are

audibly distinct variants of a phoneme e.g. the phoneme /h/ in ‘aseptic technique’ is the allophone /k/ and in ‘handover’ the allophone is /h/.

British English has about 42 - 46 phonemes (IPA, 2015) of which 24 are within the 21 consonants (Kuiper and Allan, 2010) and thus phonemes frequent the five vowels four-to-five times more so. People speak words by sequencing small distinctive sound units that represent the 26 letters of the English alphabet (Akmajian *et al.*, 2017). This sequencing is by an individual letter or a few letters forming graphemes which are the smallest meaningful contrastive unit of sound (Mather and Wendling, 2012).

Student nurses with dyslexia might accidentally transpose the initial sounds or letters of two or more words with spoonerisms (Menghini *et al.*, 2011) as in saying ‘you have hissed the mandover’ for ‘you have missed the handover’. Their spoonerisms may also feature within the sounds or letters of two or more spoken words e.g. saying ‘hypodemic nurdle’ instead of ‘hypodermic needle’. If for example during shift handover, a mentor (NMC, 2008) were to intentionally continue to ridicule a student nurse’s lexical mispronunciation articulation disorder, when they have disclosed their diagnosis of dyslexia and made clear that this was a problem for them, it could constitute an overt act of disability discrimination (Great Britain. Equality Act, 2010).

Literacy is sometimes defined as spoken language in an associative alphabetic code which enables reading and writing (Tunmer *in* Cooper and Ratele, 2014). In British English, letters and grapheme letter clusters represent phonemes (Dymock and Nicholson, 2013). Specific phonemic linguistic difficulties are evident at the very early stages of associative learning (Jones *et al.*, 2013). People with dyslexia have a cross-modal deficit in the phonological processing of the correct letter-to-speech sound integration (Blomert, 2011; Zorzi *et al.*, 2012) and poor verbal categorical fluency (Varvara *et al.*, 2014). There is a deficit in their grapheme-to-phoneme conversion where letters are incorrectly mapped to speech sounds and there is an impaired ability to represent this with the correct pronunciation (Thomas *et al.*, *in* Marshall, 2013).

Student nurses with dyslexia therefore have particular difficulties reading out loud. If a mentor (NMC, 2008) were to intentionally make a student nurse (who has disclosed their diagnosis of dyslexia and made clear that reading text out loud was a particular problem for them during shift handover), read out loud e.g. during handover, it could also constitute a overt act of disability discrimination (Great Britain. Equality Act, 2010).

2.1.6 Neurophysiology

Quantitative comparative research studies (Hartas, 2015) between two groups consisting of control participants (Edmonds and Kennedy, 2016) and groups of people with dyslexia have used the following non-invasive and invasive healthcare diagnostic testing equipment to investigate the neurophysiological variance of encephalon function (Creswell, 2013).

‘Electroencephalography’ or EEG - records electrical activity of the brain from the scalp (NHS Choices, 2015c); ‘Electromyography’ or EMG - assesses function of nerve conduction using electrodes attached to the skin and invasive assessment of muscles using local anaesthetic and probes (NHS Choices, 2014); ‘Functional Magnetic Resonance Imaging’ or fMRI - magnetic fields, radio waves, and field gradients detect changes in brain activity associated with blood flow using a MRI scanner (NHS Choices, 2015d); ‘Magnetoencephalography’ or MEG - measures magnetic fields of brain activity with a scan (Bagiæ *et al.*, 2011) and ‘Positron Emission Tomography’ or PET – invasive image tracing scan using radiotracer injection (NHS Choices, 2015e).

Testing results for reading in subjects with dyslexia report under-activation in the left-hemisphere inferior frontal, parietotemporal, and occipitotemporal language area regions neural circuits. Functional connectivity between left inferior frontal and left occipitotemporal regions

is also disrupted in readers with dyslexia (van der derMark *et al.*, 2011). The left hemisphere receives more magnocellular input than the right hemisphere from auditory and visual systems (Giraldo-Chica, Hegarty and Schneidera, 2015) and magnocellular reading pathways in some people with dyslexia are deficient (Hoeft *et al.*, 2007; Maisog *et al.*, 2008; Richlan, Kronbichler, and Wimmer, 2009) [see 2.1.5.1 and 2.1.5.2.1]. Meanwhile there is over-activation in the left-hemispheric premotor, subcortical, and cerebellar regions (Richlan *et al.*, 2009; Wimmer *et al.*, 2010) reflecting increased reliance on silent articulatory processes (Richlan, 2012).

There is also suboptimal processing, in subjects with dyslexia, when viewing pictures with lower left-hemisphere activation when viewing objects, and higher right-hemisphere activation when viewing pseudo-objects (Araújo *et al.*, 2016). This is coupled with a significantly longer reaction time (Mayseless and Breznitz, 2011) from the early stage of processing (Jones, Kuipers and Thierry, 2016). Subjects with dyslexia additionally have a cerebellar deficit with 10-20% the expected level of activation when performing a motor sequence learning task (Nicolson *et al.*, 1999). This results in problems with procedural learning of motor skills and automatization [see 5.2.4.2] with overachieving in declarative learning of facts (Nicolson and Fawcett, 2007).

2.1.6.1 Neuroplasticity

The brain is malleable and physically develops in response to education, emotion, environment, experience and lifestyle, (Newman and Newman, 2017). There are 86.1 plus or minus 8.1 billion neurons and 84.6 plus or minus 9.8 billion non-neuronal cells in the encephalon (Azevedo *et al.*, 2009). There is a ratio of 1.0:3.6 cerebral grey matter cortex neurons to cerebellum white matter neurons (Herculano-Houzel, 2010) with axon synapse connections (Pannese, 2015). The grey matter cortex volume thickens as the internal structure of the synapses forge and refine neural connections or pathways. However connectivity through the white matter does not increase proportionally with increases in grey matter volume (Herculano-Houzel *et al.*, 2010) and people with dyslexia have a deficit in white matter connectivity to the grey matter (Casanova *et al.*, 2010).

Neurogenesis is the creation of new neurons in the hippocampus in the medial temporal lobe (Canales, 2016) of the encephalon from residual stem cells in adult brains, which is crucial for the conversion of certain short-term memory into permanent form (Sun and Lin, 2016). Learning-induced changes are evident in the parietal cortex as well as in the posterior hippocampus (Draganski *et al.*, 2006). These regions of the brain are known to be involved in memory retrieval and learning e.g. Wernicke's area (Halpern and Goldfarb, 2013). Changes in the physical

brain manifest as changes in ability in terms of literacy skill and the student nurse learning new or improved clinical skills e.g. aseptic technique [see 5.2].

2.1.6.1.1 Reading writing and spelling

It is believed that the origins of reading and writing come from people recording the spoken word as early writing systems circa 3100BCE., primarily in logographic scripts where signs represent words or morphemes (Rowe and Levine, 2015). An ancient written clay tablet named 'Abecedarian' depicting the Ugaritic cuneiform alphabet was found in 1929CE., within Ras Shamra at an ancient port city merchant trade site in modern Syria (Yon, 2006). It was designed to be read by the Phoenician people in the multilingual Mediterranean seaside area in the middle-late Bronze Age era during the 1st millennia c.1500 - 500BCE., (Gnanadesikan, 2011).

Aristotle (circa 322 - 384BCE.,) in *Peri Hermeneias* (translation: On Interpretation) credited the Greek mythical Olympian god Hermes with language and writing (Agrey, 2014). In humanity reading and writing are not evolved skills (Walsh, 2013), they are manmade and acquired. They are parasitic within the encephalon in that they utilise multiple loaned brain structures that evolved for other purposes (Mattson, 2014).

In people with dyslexia IQ and reading largely develop independently or are uncoupled whereas, in typical readers, IQ development and reading are dynamically coupled (Ferrer *et al.*, 2010). IQ is only weakly related to reading ability (Gresham and Vellutino, 2010) where dyslexia impacts reading ability. Therefore a student nurse with dyslexia and high IQ may have poor reading ability comparable to a student nurse without dyslexia with low IQ.

People with dyslexia benefit from the same teaching instruction as people without dyslexia when learning to read (Berninger and Wolf, 2015), but because they may be phonetically challenged, in their formative years, they particularly benefit from a focus on phonics when learning to read (Shaywitz, *et al.*, 2008). There is new evidence that phonics can be assisted with a computational model of learning (Ziegler, Perry and Zorzi, 2014). Reading practice is important to consolidate decoding skills and to build speed with accuracy (Tunmer and Greaney *in* Reid *et al.*, 2008). Oganian and Ahissar (2012, p. 1902) found that, unlike others, those with dyslexia are slower in the process of “regularisation” of irregular words.

There are over 80 Anglo-Saxon word decoding strategies that good readers of English use (Henry, 2010) and these words are simple and formed primarily of either one syllable (monosyllabic) or two syllables (bisyllabic) i.e. 'help', 'hand', 'cup', 'drink' and 'food'. English words of Greek origin tend to be specialised and primarily related to science. They are usually two part compounded e.g. 'phonology' is 'phon'¹ meaning sound and 'ology'² meaning body of knowledge. Latin-based English words are technical and primarily related to formal settings e.g. 'instruction' has a prefix 'in-' with a root '-struct-' and a suffix '-ion'. The Latin root carries the major meaning of the word i.e. in 'regulation' - 'gula'- means throat!

Student nurses with dyslexia see whole words as visual shapes and remember the spoken word as the whole look of the word as there is a phonological weakness with difficulty in breaking words down into their component sounds (Henry, 2010). This is effortful and slow (Stenneken *et al.*, 2011) when compared to counterparts without dyslexia who use phonological decoding rules to easily turn letters into sounds and then into speech and back from speech sounds into writing (Pritchard *et al.*, 2016).

English has many irregular spellings e.g. an infamous chaotic/phonemic spelling of 'fish' with manipulation of atypical linguistic rules becomes the non-word 'ghoti' the 'gh-' spells /f/ in togh; rough and enough, '-o-' spells /ih/ in women, and '-ti' spells /sh/ in mention and attention.

However the phonetic saying of the written word 'ghoti' is entirely unlike phonetically saying the written word 'fish'. A student nurse with dyslexia could more likely phonemically spell the English-Anglo-Saxon spoken word 'fish' in documentation as a variation of fyssh' or 'fiche'. The English word of Greek origin 'anemia' could likely be phonemically spelt as a variation of 'uhneemeeuh' or 'enimiha' in healthcare documentation. Also 'hemoglobin' (Greek-based English) can be phonemically documented by the student nurse with dyslexia as a variation of 'heemuhglohbine' or 'hemuhglowben'. The Latin-based English word 'injection' might be written up as 'ingekshuhn' or 'eengechshon' [see 5.2.4.3].

Many people with dyslexia evade reading and learning spellings in their formative years because it is enormously difficult and a very demanding and exhausting task (Henry, 2010; Ghassemi and Kapoula, 2013; Jones, Ashby and Branigan, 2013). Thus slow reading and poor spelling (Beidas, Khateb, and Breznitz, 2013) is characteristic of many student nurses with dyslexia and this poor performance becomes disabling

because of the adverse impact on their ability to carry out every-day activities of documenting care (Great Britain. Equality Act, 2010) [see 5.2.4.3].

2.1.7 Diagnosis

When a student nurse's difficulties are severe enough to interfere with everyday life and educational achievement SpLD tests would be conducted (Royal Society, 2011). These assessments may be undertaken by either a Chartered Educational Psychologist (CPsychol.) who has met the standards for British Dyslexia Association approved teacher status (British Psychological Society, 2016), or an Associate Member of the British Dyslexia Association who holds a post graduate diploma in SpLD and an assessment practising certificate (Jones and Kindersley, 2013).

The diagnostic assessment [see Table 5] may be undertaken at any time in a life-span. For example mine was during the taught part of my doctoral degree studies when I was 43 years of age. It involved a battery of tests on word reading, word spelling, and phonological awareness (Tops *et al.*, 2012). Some student nurses commence their undergraduate nursing degree with their diagnosis since childhood (from compulsory schooling). Others were diagnosed as an adult either on a

further educational course (such as ‘access to nursing’), or from previous degree studies at a higher education institution. A few people, who are not on an educational programme, would be diagnosed in the workplace by a Chartered Occupational Psychologist, because their difficulties were severe enough to notably interfere with everyday work and employment (Great Britain. Equality Act, 2010).

There is a range of literacy-based psychometric assessment tests (University of Cambridge, 2015) that may be employed by psychologists in the diagnosis of adult dyslexia and there is a broad evidence-base to the deficits of the condition that diagnosis identifies [see Table 5].

Attainments in Literacy Assessment Tests	Lists of Evidence-Based Deficits in Dyslexia
SDMT - symbol digit modalities test (Smith, 1982).	<ul style="list-style-type: none"> • Errors in response to familiar items (similar looking words are muddled), including objects, letters and digits (Jones <i>et al.</i>, 2009; 2016). • Difficulty recalling number facts (Simmons and Singleton, 2008). • Longer naming latencies in the retrieval of phonological information from long term memory (Anderson and Bower, 2014). • Deficit in phonological decoding (O'Brien, Orden and Pennington, 2013) and reading acquisition/fluency (Lyytinen <i>et al.</i>, 2015) • All cognitive resources required for decoding at the expense of reading comprehension (Hersch and Andrews, 2012).
PIAT - Peabody individual achievement test reading recognition subtest and time limited word recognition test of single word reading accuracy (Markwardt, 1997).	<ul style="list-style-type: none"> • Confusion around sound of the word and the look of the word (Jones, Ashby and Branigan, 2013). • Slow processing speed/efficiency and poor automaticity of working speed of visual processing in short-term memory with enhanced inter-item pause times (Araújo <i>et al.</i>, 2011). This is also slow even when language is not involved (Pan <i>et al.</i>, 2013).
WIATUK II - Wechsler individual achievement test (Wechsler, 2001).	<ul style="list-style-type: none"> • Poor reading fluency and forgetting words whilst speaking (Sira and Mateer, 2014). • Poor verbal fluency (Ramus <i>et al.</i>, 2013) and speaking with spoonerisms (Menghini <i>et al.</i>, 2011). • Inability to inhibit inappropriate or irrelevant verbal and motor responses (Wang, Tasi and Yang, 2012). • Poor spelling of dictated letters, letter blends and single words and specific difficulty with using homophones. Phonetic spelling is by sound therefore problems with 'their' 'they're' 'there' (Beidas, Khateb, and Breznitz, 2013). • Slow writing as the grammatical structures of planning (Das and Georgiou, 2016) and organising (Wagemans <i>et al.</i>, 2012) the writing is hindered. • Multiple demands on memory resultant poor organisation and the efficiency of tasks meaning significantly greater use of study aids and time management strategies (Kirby <i>et al.</i>, 2008).

Beery Buktenica developmental tests of visual-motor integration, motor coordination and visual perception (Beery and Beery, 2004).	<ul style="list-style-type: none"> • Difficulty focusing visual attention very rapidly on letters and their order in words (Vidyasagar and Palmer, 2010). • Poor ability to visually identify words (Yeshurun and Rashal, 2010). Difficulties in retrieving information from the visual stimulus (Jones <i>et al.</i>, 2010) with longer fixations and more regressions to re-examine words already read (Kirkby <i>et al.</i>, 2008). • Weakness in visual perception, and deficits in the areas of visual motor integration and motor coordination (Jainta and Kapoula, 2011; Vilensky, Robertson and Suarez-Quian, 2015).
TOWRE - test of word reading efficiency for phonological nonword memory (Togenson, Wagner and Rashotte, 2012).	<ul style="list-style-type: none"> • Difficulty processing auditory information in the brain (Beidas, Khateb, and Breznitz, 2013). • Poor ability to identify, segment, blend and manipulate sounds of spoken language (Blomert, 2011 and Zorzi <i>et al.</i>, 2012) with a deficit in verbal phonological fluency (Ramus <i>et al.</i>, 2013; Varvara <i>et al.</i>, 2014).
CTOPP - comprehensive test of phonological processing and naming speed in rapid automatized naming (RAN) tests and phoneme Elision task (Wagner <i>et al.</i> , 2013).	<ul style="list-style-type: none"> • Weak verbal phonological processing (Lehongre <i>et al.</i>, 2011) with poor ability to apply sound/symbol knowledge in word decoding (Yeshurun and Rashal, 2010). • Extra time and effort required to decode when reading (Shaywitz, Morris and Shaywitz, 2008). • Poor ability to segment and grapheme/phoneme translation and hold/reorganise auditory information (Peterson and Pennington, 2012). • Weakness in working memory (Menghini <i>et al.</i>, 2011) with failure to retain verbal and visual task-relevant information (McBride and Cutting, 2015).

Table 5 - evidence-based diagnostic testing for dyslexia

2.1.7.1 Disability

Discrimination against those with long-term condition and hidden

disability is not tolerated. It is a violation of UK law to discriminate and therefore a criminal matter (Great Britain. Equality Act, 2010). Whether or not dyslexia is defined as a disability within an individual is based solely on how the dyslexia effect the person and not the condition of dyslexia itself (Great Britain. Equality Act, 2010). This means that it is dependent upon whether the individual has an adverse impact on their ability to carry out normal day-to-day activities.

For example, in the case of *Kumulchew v. Starbucks* [2016] the tribunal found discrimination arising from a disability (Badshah, 2016). Record keeping was a day-to-day activity Kumulchew's dyslexia made very difficult and her employer had not made reasonable adjustments for this

(Great Britain. Equality Act, 2010) or adequately considered this in relation to the allegations (ACAS, 2015). Kumulchew was unfavourably treated (misconduct for failing to keep appropriate records) because of something connected with her disability (Great Britain. Equality Act, 2010).

2.1.7.2 Social in/justice

Social justice values involve recognising worth in all (Kinley, Sadurski and Walton, 2013) including the disadvantaged such as those with dyslexia. Social justice is a European human right (Europe. Human Rights Act, 1998) and this encompasses accepting difference and diversity, championing fairness and inclusion and reducing inequalities (Craig, 2002 cited in Reisch, 2014).

Discrimination, oppression and prejudice would be examples of social injustice (Segal, Gerdes and Steiner, 2012). Diversity means recognising difference and respecting and valuing it within practices that benefit individuals and in organisational cultures including the NHS (DH, 2003 cited in Hann, 2016). Inclusive pedagogy (NMC, 2008) involves accommodating the differing identities and requirements of individual student nurses with dyslexia, and removing barriers that impede learning (OHCHR, 2016) [see 2.1.8.1]. Equality is about fairness on practice

placements (NMC, 2008) where NHS anti-discriminatory practices (NHS Employers, 2017) ensure equal treatment and equal opportunity for everyone to participate and fulfil their potential (Great Britain. GOV.UK, 2010).

2.1.8 Neurocognition and student nurses with dyslexia on practice placements

The left hemisphere of the cerebellum is an area known for acquiring new cognitive skills and the metacognitive executive function of the automation of these i.e. fluent writing skills, fluent reading and fluent articulation of speech. Day-to-day life of people with dyslexia is affected by metacognitive executive dysfunction (Smith-Sparka *et al.*, 2016) [see 5.2].

A range of activities undertaken by student nurses in practice placements require good metacognitive executive function and therefore multiple obstacles of ‘substantial disadvantage’ that were “more than minor or trivial” (Great Britain. Equality Act, 2010, s.212(1)) could be experienced by some student nurses with dyslexia. These students typically put in more effort to attain the same results as their non-dyslexic counterparts (Bartlett, Moody and Kindersley, 2010). And as people with dyslexia may have a deficit in the exclusion of perceptual

noise (Chandrasekaran *et al.*, 2009) and were hypersensitive to background noise (Law *et al.*, 2014) the practice placements are a particularly challenging learning environment to attain neurocognition (Law *et al.*, 2014) [see 5.2.4].

2.1.8.1 Reasonable adjustments on practice placements

Under equality law (Great Britain. Equality Act, 2010, s.212(1)) NHS

employers have a duty to remove/reduce/prevent obstacles of 'substantial disadvantage' faced by employees with dyslexia (Equality and Human Rights Commission, 2016a). The duty relates to all disabled workers of an employer (Great Britain. Department for Work and Pensions, 2016) including trainees (Great Britain. GOV.UK, 2016) and therefore the NHS has a duty to remove/reduce/prevent obstacles of 'substantial disadvantage' (Great Britain. Equality Act, 2010, s.212(1)) in practice placements that could be faced by student nurses with dyslexia.

A reasonable adjustment for a student nurse with dyslexia aims to bring about equality of experience on a par to a student nurse without dyslexia who was doing the same nursing work (DSA-QAG, 2016). There may be several compensatory mechanisms required as reasonable adjustments to ensure an individual student nurse with dyslexia was not seriously

disadvantaged when doing their job (Equality and Human Rights Commission, 2016b).

The onus is on the student nurse to declare their diagnosis (Equality and Human Rights Commission, 2016c) [see 8.1.3] to their practice placement mentor (NMC, 2008). The NHS employer only has a duty to make reasonable adjustments if they know that a student nurse has a disability with ‘substantial disadvantage’ (Great Britain. Equality Act, 2010, s.212(1) and Sch. 8, para 20(1)(b)). If NHS employers fail to comply with the duty to make reasonable adjustments for student nurses then they would be committing an act of unlawful discrimination (Great Britain. Department for Work and Pensions, 2016) as “discrimination against a disabled person occurs” (Great Britain. Equality Act, 2010, s.21(2)) with employee rights to take a claim to an Employment Tribunal (Great Britain. Equality Act, 2010, s.21). Examples of reasonable adjustments in the context of practice placements include the work areas of shift handover [see 5.2.4.1], learning new skills [see 5.2.4.2] and reading documentation [see 5.2.4.3].

In summary the studies of the neurological aetiology of dyslexia are multiple and of a neurobiological basis involving; neurogenetics [see 2.1.3]; neuroanatomy [see 2.1.4] and neurophysiology (Martin,

Kronbichler and Richlan, 2016) [see 2.1.6]. In dyslexia the neurological deficits are fundamentally neuropsychological (Castles, McLean and McArthur, 2010) [see 2.1.5] and include neurocognitive dysfunction (Peterson, 2014) [see 2.1.8]. The neurological knowledge base on dyslexia is multidisciplinary with global contributions from professional scientists and scholars including molecular geneticists; linguists; neuroradiologists; neurologists; psychologists and educationalists.

2.2 Existing research using Chan's questions

I elected to use Chan's (2001) questionnaire for my own enquiry. It is a research data collection tool comprising of survey questions that seek to capture perceptions (Chan, 1999) [see 3.2.1]. I wanted to use his instrument in my study to afford insights into the students' perception of their practice placements. As noted earlier, I searched the literature to find the research that had already been undertaken using Chan's survey (2000 and 2001). I was concerned to do this so I could ensure that my study would generate new knowledge (FHEQ, 2008).

2.2.1 My strategy

The strategy I employed was to gain a systematic acquisition and understanding of the body of research knowledge which was at the forefront of the academic discipline on the practice placement perception

of student nurses (FHEQ, 2008). For this search ten university library catalogue electronic resources [see Table 6] were systematically searched. Additions to the database range [see 2.1.1; Table 3] were selected to attain peer reviewed primary research undertaken with student nursing participants. The key search words ‘clinical learning environment’ or ‘CLE’ and ‘clinical learning environment inventory’ or ‘CLEI’ were utilised to source publications written in English on the student nurses’ perception of practice placement environment. There were no country of origin, date limits or any other inclusion or exclusion criteria set to ensure that my literature sourcing attained maximum yield.

Library catalogue electronic resource	Available from
British Nursing Index (BNI)	http://www.proquest.com/products-services/bni.html
Cumulative Index Nursing Allied Health (CINAHL)	https://health.ebsco.com/products/the-cinahl-database
Electronic Journals Service (EJS)	http://ejournals.ebsco.com/
Medline	https://www.nlm.nih.gov/
Ovid Journals	http://www.ovid.com/site/catalog/journals/index.jsp
PubMed	https://www.ncbi.nlm.nih.gov/pubmed
Routledge, Taylor and Francis	http://www.tandfonline.com/
Science Direct	http://www.sciencedirect.com
Scopus	https://www.scopus.com/
Wiley	http://onlinelibrary.wiley.com/
Total:	10 sources

Table 6 - university library catalogue electronic resources searched [2.2]

The searches revealed 18 publications that all used Chan’ survey (Chan, 2000 or Chan, 2001) for their data collection. These articles covering nine different research studies (five in Australia and one each in Hong Kong, Italy, Norway and the UK) dating from 2011 back to the millennium year with the data for Chan (2000) sourced from Chan’s PhD

(Chan, 1999). I have developed an overview of the research studies in chronological order of publication date.

2.2.2 My literature review of research using Chan's questions

The data collection tool [see 3.2.1] with 70 questions was designed by

Professor Chan as part of his doctoral degree studies (Chan, 1999). He

used it to collect data from 108 second year student nurses in 13

hospitals in Adelaide, South Australia. Chan also interviewed 21

students who perceived that 'personalisation' was the most important

domain in the 'actual' practice learning environment followed closely by

'student involvement' and 'task orientation', the least important was

'individualisation' and lastly 'innovation' (Chan, 2000). In comparison

with the 'actual' hospital environment using a *t*-test (Abbott, 2016) Chan

found that students 'prefer' a practice learning environment with higher

levels of 'individualisation' and 'innovation' in pedagogic strategies, with

'student involvement', 'personalisation' and 'task orientation' following-on

in this particular order of importance (Chan, 2000).

Five more publications by Chan (2001; 2002a&b; 2003 and 2004) were

found to be further articles generated from his original doctoral research

study data (Chan, 1999) first published as Chan (2000). Following this

new research data was collected by Ip and Chan (2005) at one Hong

Kong University. In this study 281 participants completed 42 '*actual*' and 243 participants completed 42 '*preferred*' questions (Chan, 2001) [see 3.2.1.1]. His participants were all second, third and fourth year pre-registration nursing students. 'Personalisation' scored the highest mean in both 'actual' and 'preferred' and pedagogical 'innovation' on both scored the lowest. The results showed significant difference between the 'actual' and 'preferred' (ideal) practice learning environment.

I note that Chan typically attains lots of research publication output from his research studies through multiple publications. (For example Chan and Ip (2007) was a further publication of their original study data (Ip and Chan, 2005)). He published six papers originating from his doctoral research study (Chan, 1999) and from his second study (Ip and Chan, 2005) he published two and I found this inspirational.

Henderson *et al.*, (2006a) undertook a comparative study of 33 first year students on 'traditional', and 31 respondents on 'clinically orientated' programmes in Queensland Australia in 2003. The study results showed there to be no significant difference associated with the six sets of questions (Chan, 2001) except for the 'satisfaction' score where those on the new 'clinically orientated' program were more satisfied than those on the 'traditional' program. Using data collected in 2003 Henderson *et*

al. (2006b) also studied all pre-registration nursing students at the same higher education institution (389 responded representing 52%). There were three differing types of practice placement support namely 'preceptor', 'facilitation' and a 'clinical education unit model' in 25 practice placements. The results showed that the 'preceptor' model produced the most positive social climate. The researchers did not report their findings on the student nurses' 'actual' and 'preferred' practice learning environment data within this publication.

In 2006 Midgley conducted a UK exploratory cohort study where Chan's (2001) survey was completed by 67 participants. This study's results showed that 'satisfaction' and 'personalisation' were the most important scales and higher levels of 'individualisation' would feature in a 'preferred' learning environment.

Then Newton, Billett and Ockerby (2009) undertook a multi-method longitudinal study to examine student workplace learning on 29 students from one Australian university. A total of six students from second and third year were selected for a detailed analysis of their experiences. The researchers used Chan's (2001) survey along with a multi-method ethnomethodology approach to also collect data from interviews, the survey and field work observations. Although, the data results from the

survey itself were not given or discussed in this publication the researchers developed a six-factor solution to satisfaction in the practice learning environment including 'student-centeredness' and the 'affordances and engagement' as pivotal issues (Newton *et al.*, 2010).

Then Perli and Brugnolli (2009) conducted an exploratory study of 232 students from one hospital from first, second and third year studies in Italy during 2007. The highest (Chan, 2001) score was for 'satisfaction' and the lowest for 'individualisation'. Smedley and Morey (2009) studied 55 students completing the 'actual' and 38 completing the 'preferred' 84 question survey (Chan, 2001) in Australia. The students identified 'personalisation' and 'student involvement' scales as the most important 'actual' and 'preferred' perception.

It was evident in the studies by Ip and Chan (2005) and Smedley and Morey (2009) that the completion of 84 research questions (Chan, 2001) was not always seen through by participants. In these two studies participants complete the first set 'actual' 42 questions but did not complete all the second set of 'preferred' 42 questions. In the studies by Ip and Chan (2005) this was the case for 38 out of the 281 or 13.5% of participants and in the study by Smedley and Morey (2009) for 17 out of 55 or 31%. I am therefore in agreement with fellow researchers Lamont,

Brunero and Woods (2015) that the full 84 question survey tool (Chan, 2001) was problematic as it was too lengthy. Berntsen and Bjørk (2010) thought similarly and deployed use of the 'actual' without the 'preferred' version. They collected data from 74 students in Norway who were in their 1st year and placed within eight care of the older adult nursing home practice placements. They found 'personalisation' the highest score and 'satisfaction' the third highest.

An abbreviated version of Chan's questions (Chan, 2001) was constructed by Salamonson *et al.*, (2011) for their research study on the 'actual' perceptions of student nurses. Instead of a total of 84 questions the much abbreviated data collection tool (Salamonson *et al.*, 2011) has a total of just 19 questions. These consist of all seven questions from 'satisfaction' and 'personalisation' along with two questions from each of 'student involvement' and 'innovation' and a question from 'task orientation' (Chan, 2001). These questions were selected by the researchers for their match to "satisfaction with clinical placement" and "clinical facilitator support of learning" (Salamonson *et al.*, 2011, p. 2671). This was with a view to best measure (Gray, 2013) the students' perceptions of satisfaction with the mentorship pedagogy and their overall satisfaction with the practice learning environment. In 2009 data was collected from 231 pre-registration nursing participants in Australia

to test the psychometric properties of the 19 question data collection tool in this cross-sectional e-survey.

The researchers used Chan's (2003) 10 question Likert-scale scores ranging from (1) 'strongly disagree' to (5) 'strongly agree' and nine reverse question Likert-scale scores ranging from (5) 'strongly disagree' to (1) 'strongly agree' (Likert, 1932). The total scores for the nineteen question instrument range was therefore minus 19 to plus 95 (Salamonson *et al.*, 2011, p. 2670) [see 5.1]. The researchers did not report their findings on the student nurses' 'actual' practice learning environment data within this publication. Instead the focus was on the statistical validity and reliability testing of the adapted tool itself (Roy, Acharya and Roy, 2016) [see 3.2.1.1].

2.2.3 My chronological summary of existing research knowledge using Chan's questions

Chan (1999; 2000; 2001; 2002a; 2002b; 2003 and 2004) found that students 'preferred' or most wanted 'individualisation' followed by 'innovation' (innovative pedagogical practices tailored to the individual student's needs) within their practice learning environment. But their 'actual' perception ranked 'innovative' pedagogical activities as the worst area of mentorship and second to that was that the pedagogy was not

‘individualised’ to meet student learning needs in the practice learning environment. The highest ‘actual’ ranking was for ‘personalisation’.

Ip and Chan (2005; 2007) found that the ‘actual’ and ‘preferred’ highest scores were for ‘personalisation’ and the lowest score on both was ‘innovation.’ Midgley (2006) found that ‘individualisation’ was most desired in the ‘preferred’ data and the ‘actual’ high scores were found to be assigned to ‘satisfaction’ and ‘personalisation’. Perli and Brugnonli (2009) found the highest ‘actual’ score given to ‘satisfaction’ and the lowest to ‘individualisation’. ‘Personalisation’ and ‘student involvement’ issues were the most important ‘actual’ and ‘preferred’ perception ranked by the students in the study by Smedley and Morey (2009).

To summarise these collective research results, I note that the ‘actual’ mentorship of student nurses focuses on ‘personalisation’ followed by student ‘satisfaction’ and ‘student involvement’ within their practice learning environment. ‘Personalisation’ followed by student ‘satisfaction’ was a direct match to this as students also see these as top priority in their ‘preferred’ practice learning environment.

Taken from the correlated results of the students ‘actual’ and ‘preferred’ data published from these studies the areas of mentorship that require

most improvement were 'individualisation' followed by 'innovation'. They also show that the least likely well-perceived pedagogy in the 'actual' practice learning environment was 'innovative' and 'individualised'. Although students view these as issues of low importance in their 'preferred' environment, these were clearly areas for mentors (NMC, 2008) to focus on improving in the 'actual' practice learning environments.

Salamonson *et al.* (2011, p. 2671) measured the two domains of students' perception of "satisfaction with clinical placement" and "clinical facilitator support of learning" to review and improve practice placements to help students get the best from them. My critique is that the abbreviated instrument (Salamonson *et al.*, 2011) was designed to collect quality metrics on the questions related to Chans domains of 'satisfaction', 'personalisation' and 'student involvement' (Chan, 2001). However all of the previous researchers work that I have reviewed in this section collectively informs me that these three domains rank as already 'actually' the best areas of mentor pedagogy perceived by students on practice placements.

It was remiss that Salamonson *et al.* (2011) did not collect data from their students on the issues previously highlighted in the literature as

being perceived as having poor standards of pedagogic practices. The lacking areas were pedagogic 'individualism' and 'innovation' on practice placements. Had the researchers focused positively on developing these two areas of mentorship function, then the higher educational institutions overall outcome metrics resulting from the project would likely be one of higher mentoring standards and higher student satisfaction with the perception of their actual practice learning environments (Bjørk *et al.*, 2014).

My literature search revealed that research on a cohort of participants with a positive dyslexia diagnosis [see 1.3] had not been undertaken using Chan's data collection tool (2000; 2001) or with Salamonson *et al.*'s (2011) abbreviated version. I therefore designed my study to collect data from student nurses with dyslexia on their perception of the 'actual' clinical practice placement [see 3.2.1 and 3.4]. For the purposes of analysing and reporting meaningful data on satisfaction with practice placements and mentor support of learning in my thesis report, I have extracted the same 19 questions as Salamonson *et al.* (2011) for descriptive statistical analysis of my quantitative data [see 4.2].

2.3 Existing research on my phenomenon of interest

This final section of my literature review was to acquire and understand the evidence-based body of knowledge on issues of interest on and around my phenomenon (FHEQ, 2008). I did this section of research work in 2010 to prepare my research proposal, ethics application and request to register my research degree. I achieved this preparatory work with systematic searching followed by critical evaluation of all relevant primary research studies published between 2000-2010. For a comprehensive critique I used the structured framework of a 10 questioned tool (CASP, 2014). This was developed by the Public Health Resource Unit (England) for the NHS and was therefore much suited to my purpose.

I utilised elements of critical thinking (Knowles and McGloin, 2007; Knowles and Gray, 2011) and the rules of rigour as agreed by the wider research community in a critical appraisal of the assumptions, credibility, validity and trustworthiness of the published research (Rolfe, 2006) and I have presented my full critique for each article that met the review criteria [see 2.3.2].

This literature engaged me with relevant studies and through CASP (2014) I evaluated it and identified major debates and attained an

understanding of the published researchers “theoretical positions” (Adolphus, 2013, p. 1). My intellectual and creative synthesis enabled me to found my own study to contribute new information (Reason and Bradbury, 2006) [see 2.3.3]. The *a priori* knowledge I attained supported my function of data collection at my interviews [see 3.2.2 and 3.5.2]. To ensure that my discussion on my own research results and findings was current and up to date and since I had completed my research proposal in early 2010 I repeated my literature search in 2017 to capture the concurrent work of fellow researchers who held a shared interest in my phenomenon [see 2.3.4].

2.3.1 My strategy

As scholarship builds on previous cumulative work my intention was to create a literature search that would yield the back-dated 10 years of post-millennium research on my phenomenon and I wanted to be simultaneously thorough. To enable a systematic review I followed the LSBU library guides (LSBU, 2013) on literature searching on databases [see 2.3.1.1; Table 7].

To ensure that my search was serendipitous as well as systematic, I began to consciously look out for anything and everything in connection with my phenomenon. As some major research studies were published

in monographs or reports for stakeholders I searched the Department of Health, Nursing and Midwifery Council, Royal College of Nursing and Higher Education Academy web sites for information on dyslexia intent to find any commissioned studies on this. When examining organisation web sites I discovered a journal on dyslexia enabling me to search within the index pages for research on my phenomenon. I furthermore undertook citation searching using Google Scholar <http://scholar.google.co.uk> and Scopus <https://www.scopus.com/> also seeking out chapters in edited e-books containing primary research. I searched for existing literature reviews on dyslexia to see if these authors' references might lead me to any primary studies on my chosen population. I furthermore set up a Zetoc alert service to receive phenomenon specific articles directly to my Email inbox <http://zetoc.jisc.ac.uk/> .

2.3.1.1 Databases

I extensively searched the university library catalogue, electronic library and repository both at LSBU and my employers' university. The databases that I selected for my search were of education and nursing genre [see Table 7].

Library catalogue electronic resource	Available from
Academic OneFile	https://www.jisc-collections.ac.uk/Catalogue/Overview/Index/1595
Blackwell Synergy	http://www.eldis.org/organisation/A32372
British Nursing Index (BNI)	http://www.proquest.com/products-services/bni.html
Cochrane Database of Systematic Reviews	http://www.cochranelibrary.com/
Cumulative Index to Nursing and Allied Health (CINAHL)	https://health.ebsco.com/products/the-cinahl-database
Education Research Complete (EBSCO) including Allied and Complementary Medicine Database (AMED) and British Education Index (BEI) Education Abstracts and Educational Administration Abstracts	https://www.ebsco.com/products/research-databases/education-research-complete
Educational Research Information Center (ERIC)	https://eric.ed.gov/?journals
Electronic Journals Service (EJS)	http://ejournals.ebsco.com/
ETHOS	http://ethos.bl.uk/Home.do?sessionId=8A03E2340163B89A49CC719B8DA810AD
Ovid Journals	http://www.ovid.com/site/catalog/journals/index.jsp
PubMed+Medline (National Center for Biotechnology Information)	https://www.ncbi.nlm.nih.gov/pubmed
Routledge, Taylor and Francis including Education Research Abstracts (ERA)	http://www.tandfonline.com/
Science Direct	http://www.sciencedirect.com
Wiley	http://onlinelibrary.wiley.com/
Total:	14 sources

Table 7 - university library catalogue electronic resources searched [2.3]

2.3.1.2 Keywords

I used the PICO method of problem, intervention, comparison and outcome (Richardson *et al.*, 1995) on my phenomenon to define my keywords. I truncated words: student/students=*student\$*; nurse/nurses/nursing=*nurs\$*; dyslexia/dyslexic=*dyslexi\$* and mentor/mentorship/mentoring=*mentor\$*. I furthermore mixed and matched all of my keywords to search for combinations using two Boolean operators 'AND' and 'OR' as shown within my PICO framework [see Table 8].

PICO combinations	Keywords used to search databases						
Problem 1 of 1a AND 1 of 1b	1a	student\$ nurs\$ (OR	pre-registration nurs\$ OR	undergraduate nurs\$			
	1b	dyslexi\$ OR	learning disabilit\$ OR	learning difficult\$			
Intervention 1ab AND 1 of 2a AND 1 or 2 of 2b	2a	practice placement\$ OR	clinical learning environment\$ OR	clinical placement\$ OR	clinical allocation OR	placement\$ environment\$ OR	practice environment\$
	2b	nurs\$ education OR	nurs\$ training AND/OR	mentor\$			
Compare	3	no intervention/other intervention					
Outcome 1ab + 2ab AND 1 of 4	4	student\$ learning OR	student\$ satisfaction OR	student\$ support OR	student\$ experience\$		

Table 8 - PICO keyword search framework

2.3.1.3 Inclusion and exclusion criteria

My search was for 2000-2010 era literature available in English

consisting of peer reviewed primary research articles and unpublished doctoral theses' on UK nurse education directly related to my keywords [see Table 9].

Inclusion criteria	Exclusion criteria	Rationale
Published in the English language	Not written in the English language	Being monolingual or unilingual in English
Published between 2000 and 2010	Published outside of the set timescales	I commenced doctoral degree studies in 2009 and was writing my research proposal in 2010. It was accepted academic practice at LSBU to make use of resources that were up to, but not over 10 years old
Peer reviewed primary research (including doctoral theses') related to my phenomenon (keywords)	Primary research not directly related to my phenomenon (keywords). Discussion papers or editorial papers whether or not they were directly related to my phenomenon (keywords)	Opinion based on subjectivity and bias, where instead peer reviewed primary results/findings attained through research processes (rigor) was sought

Table 9 - inclusion/exclusion criteria for literature on my phenomenon

Due to the volume of literature attained [see 2.3.1.4] it was necessary to establish a very detailed exclusion checklist with rationale [see Table 10].

Exclusion Criteria	Rationale
Under 16 years and further education college student participants	Compulsory schooling and access to nursing courses at further education colleges precede university nursing education programmes with practice placements within NHS
Non-UK based participants	Dyslexia holds differing diagnostic criteria by country/language
Non-NHS settings	The study seeks to inform on NHS practice placement environments for UK universities, and seeks to build on the existing knowledge base for these establishments
Disabilities other than dyslexia	Dyslexia was the chosen focus for this study rather than the range of other possible learning, physical and intellectual disabilities. Dyslexia + other SpLD spectrum diagnosis/disabilities therefore excluded
Post-registration nursing students (NMC registrants)	My study focused on nursing students as the education of this group forms my professional workload with my employer
Healthcare professionals that were not nurses and healthcare students that were not nurses	The current NMC (2010) all graduate nursing curricula has a unique 50% theory (university based) and 50% practice placements make-up and this was the educational course that was of interest for my study and my employment

Table 10 - exclusion checklist

2.3.1.4 Results

In total 423,583 references were identified for review from the 14 databases [see 2.3.1.1; Table 7] using my search terms with all of my keyword combinations [see 2.3.1.2; Table 8]. I filtered these results by applying my inclusion and exclusion criteria [see 2.3.1.3; Table 9] and I narrowed the search to my dates of interest from year 2000 to 2010. The remainder were reduced by the type of publication seeking those written in English and from peer reviewed journals.

For all the remaining publications I made a cursory read of the titles and abstracts to determine those which furthermore met my checklist criteria [see 2.3.1.3; Table 10]. This was a difficult task because of the volume involved so I set my PC screen to show the articles only by title and I used the 'find' tool to search for my keywords and selected to keep the articles that had a match. I also found that using this technique to seek out information within the abstract on the research methods, using the 'find' tool for the words 'research' or 'quantitative' or 'qualitative' meant that the non-research literature and secondary research was relatively easily identified for exclusion.

I undertook a comprehensive read of the remaining 16 articles abstracts whilst double checking with a final acceptance for my literature review

[see 2.3.1.3; Table 10]. This process revealed that there were some articles that were not studies on dyslexia, but included some vague mention of it and these were readily excluded. The remaining studies seemed to all have participants studying at UK universities with NHS practice placements.

However there was one study for exclusion which did not specifically examine those with dyslexia and was rather-more an eclectic mix on SpLDs. It was not given whether any of these participants actually had a positive dyslexia diagnosis [see 2.1.7] and it would be an assumption to think that they had and so this was readily excluded. Two studies focused on the NHS requirements to support their nurse registrants as employees instead of including participants who were student nurses. There were several studies excluded as they focused on interprofessional healthcare workers including occupational therapists and physiotherapists. The full number of research papers which were identified, and either included or excluded in my review were presented in my flowchart [see Fig. 1].



Figure 1 - literature review 2000-2010 flowchart results

Contemporary research on my phenomenon was limited. In total just six post millennium research studies were sourced for review; Wright (2000), Kolanko (2003), Illingworth (2005), Morris and Turnbull (2006), Price and Gale (2006) and White (2007). Considering these authors to be key scholars in the field of my phenomenon I searched for their further publications by author name. I also searched the reference lists in each of these articles for further research but this approach was not fruitful beyond sourcing further publications from the same pieces of primary research (Morris and Turnbull, 2007) and White's (2006) PhD thesis affirming this topic to be a good choice to generate new knowledge.

2.3.1.5 PRISMA

All six articles, which according to their title and abstract, seemingly met my inclusion criteria were attained in full-text, some were readily available to me via database links and others I had to order electronically via library services. I chronologically analysed and critically appraised these using CASP (2014) to ensure that I was sourcing subject matter from research on my phenomenon that was of a rigorous standard within the research community. Following this analysis I chronologically summarised the six articles into an adapted PRISMA (Moher *et al.*, 2009) [see Table 11]

Author(s)	Aim(s)	Sample	Methods and instrumentation and analysis	Key findings and recommendations	Number of references	Accept/ Reject and rationale
Wright (2000)	To investigate the academic support of nursing and midwifery students with dyslexia and to identify good practice and seek innovative approaches	28 nursing Deans	Email survey of one open ended question. This was quantitative research yet the researcher incorrectly stated that grounded theory methodology informed the study.	Stumbling blocks around funding dyslexia diagnostic assessments and university staff development. Furthermore answers included resource issues for specialist educational support and student access to specialist technology in the university.	References to primary research = 1	Reject: Not on my phenomenon: No nursing student participants.
Kolanko (2003)	To describe the meaning of being a student nurse with a learning disability, how they have learned to learn and how previous personal and educational experiences influence this.	Seven American nursing student participants with reading disabilities, Five had mathematical disability and two had attention deficit disorders.	Interpretative research into the meaning of being a nursing student who was learning disabled. Two individual open-ended interviews. Stakes model for collective case study research and analysis used.	Data were analysed into five themes of 1) struggle; 2) learning how to learn; 3) issues concerning time; 4) social support and 5) personal stories	References to primary research = 3	Reject: Not on my phenomenon. American students and it was also not clear if any of these students did or did not have a positive dyslexia diagnosis
Illingworth (2005)	To explore the effects of being dyslexic on the working lives of nurses and healthcare assistants to identify what might be done to improve their working lives.	Seven participants; five registered nurses and two healthcare assistants. Not known if there was any formal positive dyslexia diagnosis	One semi-structured audio-tape recorded interview per participant. Strauss and Corbin interpretative data analysis (with no evidence of grounded theory methodology used).	Takes longer writing reports and therefore stay late at work or take work home. They found others quick to judge them as lazy with a lack of understanding for dyslexia. They said that colleagues lacked awareness and had misconceptions about dyslexia for example thinking that it does not exist and that people were just thick.	References to primary research = 3	Reject: Not on my phenomenon. Not student nurse participants.
Morris and Turnbull (2006)	Focus on the problems participants had in disclosing their diagnosis, and the negative stigma attached and the coping strategies participants had personalised to address their limitations.	18 nursing students with dyslexia	Qualitative exploratory study with individual in-depth audio-taped interviews Morse and Field (1995) thematic analysis	1) Non-disclosure: for discrimination and ridicule; 2) Managing difficulties on placements: this was personalised; 3) Time: undisturbed place to complete documentation not always tolerated by placement staff 4) Emotional: weaknesses rather than strengths were associated with dyslexia; 5) Future employment: majority prefer a slower pace and find less acute environments provide more satisfying work experiences.	References to primary research = 2	Accept: On my phenomenon and passes CASP (2014) criteria
Price and Gale (2006)	Impact dyslexia had on student nurse learning and performance in the academic and practice environments	10 nursing students with dyslexia	Comparative study 10 participants in the control group and 10 in the group with dyslexia. Two focus group video-taped interviews. Interpretive phenomenology	1) Cognitive processing problems: difficulty keeping up with handover; 2) Literacy difficulties; inaccurate spelling; 3) Telecommunications: making notes at speed and problems with phone exacerbated by distractions from background noise; 4) Lack of automaticity skills and new skills hard to learn; 5) Memory problems: difficulties remembering instructions so tasks need writing down; 6) Organisational skills; prefer routine ways of working; 7) Nursing skills: difficult to follow charts lines and symbols.	References to primary research = 2	Accept: On my phenomenon and passes CASP (2014) criteria
White (2007)	The problems that students with dyslexia experienced and strategies used to overcome these in developing clinical nursing practice competence.	Seven students, three support and eight teaching staff and eight mentors.	Qualitative case study methodology. Interviews or postal questionnaire for mentors. Four students participated in five semi-structured longitudinal interviews with their placement mentors. Thematic review but it was not made clear how the sets of data from participating groups within the case was similar or contrasting and what matrix the data formed and matched into the case study results.	1) Clinical information: handover was too fast to make notes; handwriting was slow and difficult and text was read a number of times to gain comprehension; issues with spelling and pronouncing long unfamiliar or unusual words 2) Clinical performance: remembering to do things affected by poor short term memory and short concentration span; verbally passing on complicated instructions if difficult; tasks such as discharge planning was worsened by filling in forms and writing letters; 3) Development of clinical competence depends on the student's individual needs and relationships with mentors	References to primary research = 5	Accept: On my phenomenon Methodology could be clearer for CASP (2014) assessment criteria. However White's (2006) PhD thesis passed CASP criteria.

Table 11 - adapted PRISMA checklist for existing research 2000-2007

2.3.2 My summary and CASP critique of the three individual studies

The three primary research studies sourced on my phenomenon which were accepted in my adapted PRISMA which is the preferred reporting items for systematic reviews and meta-analyses checklist (Moher *et al.*, 2009) [see 2.3.1.5] were presented here in detail through the CASP tool (2014).

2.3.2.1 Morris and Turnbull (2006) Clinical experiences of students with dyslexia.

Morris and Turnbull (2006) undertook a qualitative exploratory study with thematic analysis interviewing 18 nursing students with dyslexia. They focused on the problems participants had in disclosing their diagnosis, and the negative stigma attached and the coping strategies participants had personalised to address their limitations [see Appendix 11.3].

Morris and Turnbull (2006) conclude their article with what could be perceived as a discriminatory question with unexplained and unfounded claims, these being whether all applicants with dyslexia should be screened for exclusion from nursing courses due to issues around patient safety. Familiarising themselves with publications by Sanderson-Mann and McCandless (2005) along with Dame Sarah Mullally, former England Chief Nursing Officer's declaration (Mullally, 2005) would have prevented these careless suggestions.

2.3.2.2 Price and Gale (2006) How do dyslexic nursing students cope in clinical practice?

Price and Gale (2006) did an exploratory comparative study to discover the impact dyslexia had on student nurse learning and performance in the academic and practice environments. These researchers' participants were all third year students and were divided into two focus groups for video-taped interview. They had 10 participants in their control group and 10 in the group with dyslexia. The researchers speculated that the students with dyslexia experienced greater and more persistent difficulties than their non-dyslexic counterparts on the hospital wards. The researchers used interpretive phenomenology to examine the impact of dyslexia in the workplace, and the ability of students to develop coping strategies during practice placements within a set of six interview questions [see Appendix 11.4].

Price and Gale (2006) have not given answers to the assumed issues they raised on patient safety in the practice placement areas. Issues of apparent disability discrimination were also raised but without detail. Some ignorance about dyslexia amongst mentors (NMC, 2006) was alluded to, but again without detail. The researchers conclude that pedagogical support was required for students on placements, but they did not make clear the form this was to take.

2.3.2.3 White (2007) Supporting nursing students with dyslexia in clinical practice

White (2007) collected data over two years for her PhD study (White, 2006) using qualitative case study methodology with thematic review NVivo 10® (QSR International®, 2016) to determine the problems that students with dyslexia experienced and strategies used to overcome these in developing clinical nursing practice competence. The stage-one interview participants consisted of seven students, three support and eight teaching staff. Furthermore eight mentors (NMC, 2006) completed a postal questionnaire. In stage-two, four students participated in five semi-structured interviews with seven of their placement mentors (NMC, 2006) forming a longitudinal element to this research. The researcher was particularly interested in the range and severity of practical problems that students had with their dyslexia whilst on placements and whether a fast pace of work in an acute area was found more difficult than somewhere with less of a pace such as a community setting [see Appendix 11.5].

2.3.3 My synthesis of gaps in existing research knowledge

I used guidance from Aveyard (2014) to compare and contrast the research findings from each publication in an integrated manner. I analysed the information acquired from my literature review to identify the gaps in the research knowledge on my phenomenon (FHEQ, 2008).

My literature review put me in a position to identify the need for some new research. I concluded that the experiences of being a student nurse with dyslexia in practice placements was unknown in terms of the 'sustainability, equality and diversity' climate for learning (LSBU, 2017). My research proposal set out to uncover practice placement issues of diversity, inclusivity and equitability within the pedagogical experiences of student nurses with dyslexia. My initial research questions were; what can be learnt about the actual practice placement environment that student's experienced and what can be learnt about the practice placement environment that was preferred and desired by student nurses who have a positive dyslexia diagnosis?

Due to the data collection of the published research taking place prior to the Great Britain. Equality Act (2010) it was also not known whether reasonable adjustments for the individual learning of each student nurse with dyslexia were supported in practice placements. There was a gap in the existing nursing knowledge (FHEQ, 2008) on the lived-experience of actual practice placements; the diversity, inclusivity and equitability of learning opportunities and the reasonable adjustments supported for student nurses with dyslexia. Through my research I want to contribute to shaping a more just, inclusive and equal society for the community of nursing students with dyslexia [see 2.1.7.2].

2.3.4 Repeat search for 2007-2017 literature on my phenomenon

By the time I began writing my thesis considerable time had passed and so I followed the same literature search and review steps [see 2.3.1] the only change being that my era of interest was 2007-2017. I re-searched as I had written up my research proposal etc. during 2010 (Knowles, 2010d and 1010e) and I wanted to know if there was any research on my phenomenon that I has missed along with further studies published after my original search. I considered this likely because of the Equality Act published in 2010 (Great Britain. Equality Act, 2010).

I summarised the five articles published between years 2007-2017 into an adapted PRISMA checklist (Moher *et al.*, 2009) [see Table 12]. This literature review enabled me to undertake a CASP (2014) critique and in the addition to these accepted studies White's (2007) study [see 2.3.1.5; Table 11 and see 2.3.2.3 with Appendix 11.5] will also feature in my discussions on the links in support of or controversies within my own research results and findings with the research on my phenomenon [see 5.2].

Author(s)	Aim(s)	Sample	Methods and instrumentation and analysis	Key findings and recommendations	Number of references	Accept/ Reject and rationale
Crouch (2008)	To explore the experiences and needs of nursing and midwifery dyslexic students in clinical practice, and ways in which staff could support those students	16 nursing and midwifery students with dyslexia. Three mentors.	Qualitative. One-to-one, face-to-face tape-recorded interviews analysed with a constant comparative method.	Mentors need to be fully informed of dyslexia and be aware of the student's need; The students reported that they would like their work checked over; Many of the students had developed strategies to help avoid and or minimise mistakes in practice but some mistakes did occur. Impact on the student: Forgetfulness; Difficulty with spelling; grammar and writing; Problems with words and numbers and Slow at doing things.	References to primary research = 3	Accept: On my phenomenon and passes CASP (2014) criteria. Can tease out the findings of the students with dyslexia.
Child and Langford (2011)	To compare the practice-based experiences of students with and without dyslexia.	3 rd year nursing students 6 without dyslexia and 6 with dyslexia.	Qualitative exploratory phenomenology semi-structured one-to-one interviews. Thematic analysis.	From those with dyslexia: Lack of mentor knowledge on dyslexia; feel discriminated against and judged; have low confidence; difficulties experienced 1) take more time to do tasks; problems with short-term memory; pronunciation; reading; spelling and writing.	References to primary research = 3	Accept: On my phenomenon and passes CASP (2014) criteria. Can tease out the findings of the students with dyslexia.
Ridley (2011)	To explore the practice-based experiences of student nurses with dyslexia for Master's degree dissertation.	Seven student nurses with dyslexia.	Qualitative exploratory phenomenology semi-structured one-to-one interviews.	Disclosure causes anxiety and fear of ridicule. Perceived lack of caring and discrimination from peers in the nursing profession. Support on practice placement needs to be tailored to the individual.	References to primary research = 7	Accept: On my phenomenon and passes CASP (2014) criteria
Sanderson-Mann <i>et al.</i> (2012)	To gain a deeper and richer understanding of issues for student nurses with dyslexia within practice-based learning.	Interviews 7 lecturers and nine student nurses (five in a focus group; three by telephone and one one-to-one). Questionnaire 54 students with dyslexia and 52 without dyslexia.	Mixed-method semi-structured interviews followed by comparative questionnaire. Qualitative framework analysis (Ritchie and Spencer, 1994) and qualitative SPSS Mann-Whitney test (Walker and Almond, 2010)	Mentors need a better understanding of dyslexia. Students find their own coping strategies. More time is needed for reading care plans and writing in patient's notes.	References to primary research = 9	Accept: On my phenomenon and passes CASP (2014) criteria. Can tease out the findings and results from student nurses with dyslexia.
Walker <i>et al.</i> (2013)	To explore tensions between higher education and healthcare sector placements.	Interviews nine student nurses with dyslexia and six registered nurses (may or may not have dyslexia). E-survey completed by 96 healthcare professionals of whom 20% self-reported a disability (may or may not be dyslexia)	Mixed methods. Semi-structured one-to-one interview. On-line survey.	Perceived risk to patient care (by peers) not actual risk when being cared for by a nurse with dyslexia. Negative feelings projected toward those with dyslexia. Students were selective about disclosure and who they informed. Healthcare professions staff lack knowledge to help a disabled student. Students were very reluctant to disclose as they worried that this would affect the way their competency was assessed or their future employment opportunities.	References to primary research = 6	Accept: On my phenomenon and passes CASP (2014) criteria but only 3 direct quotes from the nine student interviews used. However richer student data is available in the main project report (Dearnley <i>et al.</i> , 2010).

Table 12 - adapted PRISMA checklist for existing research 2007-2017

3.0 Methodologies and methods:

My approach was to employ hermeneutics (Agrey, 2014) to understand the lived-experience of my phenomenon (van Manen, 2016) and this approach was well-suited to my human science research into nurse education (Smith, 2007). My study had an explanatory sequential design (DeCuir-Gunby and Schutz, 2016), meaning it was formed with a qualitative explanatory core component of interview method (Gubrium *et al.*, 2012). I conducted my interviews after my supplementary quantitative descriptive e-survey (Morse and Niehaus, 2016).

I did this because the single “snapshot” data from my cross-sections e-survey (Knowles, 2010a) provided me with data for my prospective qualitative enquiry (Cohen, Manion and Morrison, 2017, p. 213). In this first line of enquiry I used psychometric methods to measure the characteristics of practice placements (University of Cambridge, 2015). Then I used my descriptive statistical analysis (Roy, Acharya and Roy, 2016) [see 4.2] to generate and report new knowledge (FHEQ, 2008) on my theory of student perceptions (Merleau-Ponty, *in Cobb translation by Edie* 1964) [see 5.1]. I also used some of my participants’ initial answers to my e-survey (Knowles, 2010a) to develop my interview questions for my sequential (DeCuir-Gunby and Schutz, 2016) qualitative core research component (Gubrium *et al.*, 2012) [see 3.2.2].

Qualitative approaches were ideal for exploring under-researched areas, such as practice placements, as they allow for the development of novel, bottom-up theory from my data and they encompass cultural, political and societal influences (Langdridge and Hagger-Johnson, 2013). As my phenomenon was “socially situated and socially and culturally saturated” (Cohen, Manion and Morrison, 2017, p. 134) with a political interest on diversity, inclusivity and equality in education (LSBU, 2017). I designed my research within this well-suited paradigm.

A qualitative paradigm (Given, 2015) formed the ontological drive to my interview line of enquiry with a small voluntary group of my survey participants [see 3.2.2]. By this I mean that I was equipped with *a priori* knowledge as I had undertaken deductive reasoning to understand my phenomenon with the EdD coursework on diversity, inclusivity and equitability (LSBU, 2017) and my literature review studies on both dyslexia and its effects on my phenomenon of interest. I used *a priori* knowledge from the available e-survey answers before I started with my interview data collection experiences (Reed and Pease, 2017).

My *a priori* knowledge and understanding on my phenomenon was a key feature of my interpretative phenomenology (Parahoo, 2014). Following my interviews [see 3.5.2] I wanted to attain an authentic *a posteriori*

understanding on how and why my participants experienced my phenomenon the way that they did (Hartas, 2015). I planned to reach my understanding of life-world meaning (Makkreel and Rodi, 2010) through inductive reasoning, a process of embedding all of my acquired wisdom on my phenomenon to generate new theory for educational practices (Evans and Over, 2013).

The lived-experience of my phenomenon was revealed or pointed out to me by accounts of my participants' refined first-person descriptions of events objectified in my participants' language (Gadamer, 1976 *cited in* Friesen, Henriksson, and Saevi, 2012). I therefore saw my data as retrospective in that my participants recollected past experiences (Grove, Gray, and Burns, 2015) that they had lived through. On or around the time of the experience my participant had interpreted these as events that had shaped informed their perspective on their practice placements (van Manen, 2016) and these had been provided in their e-survey responses (Knowles, 2010a).

I analysed my data to identify commonalities on the human way of being or living my phenomenon [see 4.4] and I pointed out the meaning of these in my thesis encompassing the external framework of diversity, inclusivity and equality (Gadamer, 1976 *cited in* Friesen, Henriksson,

and Saevi, 2012) [see 5.2]. As I used quantitative and qualitative paradigms and processes my research was a mixed-method study (Andrew and Halcomb, 2009).

3.1 My mixed-method research design

Quantitative and qualitative research traditions stem from what could be seen as opposite paradigms (Alexander, 2006) however, I see them as complementary (Hay, 2016). They largely constitute a trilogy of hierarchical levels, these being: theoretical (epistemological); ideological (ontological) and practical (methodological) processes and I used these elements to underpin my research design and conduct (Creswell, 2013) [see 3.1.1]. I found that the key to consistency with my mixed-methods research was that I viewed these two paradigms inherent constructs as complementing and as a whole (Carter and Little, 2007). By this I mean that my epistemological *a priori* and *a posteriori* knowledge and understanding along with my pre-conceived ontological values and beliefs underpinned my methodological actions. With due process I experienced reformation of the features of epistemology, ontology and methodology in terms of my self-development throughout my studies [see 7.0].

A quantitative paradigm (Killam, 2013) formed the basis of my statistical enquiry within my research design (Creswell, 2013). I capitalised on this rationalistic methodology to collect objective (Hartas, 2015) nominal data that I could measure. By this I mean that from a quantitative perspective or proportionate viewpoint, the answers provided by my participants for me to synthesise theoretically were evidence that resulted from pre-set questions. I saw this data as fixed, discoverable (Salkind, 2012) and could be deduced.

The 64 responses to my cross-sectional e-survey (Knowles, 2010a) were held in Google® docs™ and I retrieved my raw data into an Excel™ spreadsheet (Microsoft® Office™, 2013). I selected 19 question nominal data using the same abbreviated version of Chan's questions (Chan, 2001; Salamonson *et al.*, 2011) [see 3.2.1.1] and I reduced these particulars into numerical data (Gray, 2013). I did this data conversion using Chan's (2003) positive and negative (reverse) summative Likert-scale (Likert, 1932) [see 3.2.1.1] to provide an exact numerical measurement (Wakita, Ueshima and Noguchi, 2012) so that I could count my data (Hartas, 2015). I furthermore attained the instance data values and grouped these into multi-similarity relations as types or universals (Abbott, 2016). The Likert-scale was normative meaning that it allows me to compare an individual participant's final score to those of

others in my sample-group (Ho, 2017). Using Excel Quick Analysis™ (Microsoft® Office™, 2013) I summarised my processed data into bar charts I did this to show the comparison of my research sample categories with one another through the height of the charted block columns [see 4.2.2].

I transferred my data into SPSS 20® (IBM®, 2016) to store, organise and process my data. I counted the Likert-score (Likert, 1932) for each datum set and I summarised the relative proportions of frequencies and percentages of like entities (Smith and Ceusters, 2010) and I did this as I wanted to describe my individual participant's perspectives. To interpret my sample-group data I analysed the central tendencies of mode and mean measures of distribution or measures of dispersion of range and standard deviations and variance (Abbott, 2016) [see 4.2.2]. Moreover I used inferential statistic techniques to measure the parametric inferences of the means standard of error using bootstrapping (Kass, 2011). I quantified the probability of error by measuring the variance of standard deviation (Banerjee and Chaudhury, 2010). I calculated the dispersion or variability correlation using 0.05 confidence interval for statistically significant results (Roy, Acharya and Roy, 2016). I undertook inferential analysis with ANOVA one-sample T-Test and I also calculated the positive and negative skew from the mean (Abbott, 2016) [see 4.2.2].

Then I used my sample data to infer statistical estimations and predictions or generalisations about my population (Kass, 2011) [see 3.4.3] meaning that I used my sample of 64 participants to scale up to my population of 126 student nurses with dyslexia. These mathematical and statistical analysis and inferential measures enabled me to synthesise my descriptive theory [see 5.1].

Validity, rigour and generalisability of my descriptive numerical calculations were the hallmarks (Given, 2015) of my statistical thinking. The quantitative paradigm is characterised by claims of objectivity (Hartas, 2015) resulting, at an ideological level, in pragmatism as a realistic positivist worldview (Killam, 2013). This means that I would expect my participants recorded values from my e-survey (Knowles, 2010a) responses to hold valid true-information. However there was likely invalid false-information included due to inevitable inconsistencies of participants' perspectives (Liu, 2011). My quantitative data held uncertainties (Abbott, 2016) and my results were therefore approximations of some true values (Kass, 2011). I did not claim there to be complete accuracy within the quantitative data I collected (Banerjee and Chaudhury, 2010). Assumptions that my participants' responses were objective where in reality they construct a subjective meaning in

answer to my questions. This was another important consideration when viewing my results (Dumez, 2016) [see 5.1].

I wanted to know what was essential to being a student with dyslexia (van Manen, 2016) meaning that I wanted to uncover deeper and richer understandings of my phenomenon (Burnard, Morrison and Gluyas, 2011) by finding out about my participants realities and lifeworld of lived-experience (Langdridge and Hagger-Johnson, 2013). From a qualitative perspective or constructivist viewpoint, lived-experience was flexible as it was shaped through my participants' subjective interaction with the world (Dumez, 2016) and the psychosocial-cultural constructs of their relative world view (Ritchie *et al.*, 2013).

Interactive methods between me, as a R1: first-stage researcher (European Commission. HORIZON-2020, 2017), and my participants, as the researched, were designed for me to collect positive and negative subjective experience through verbal first-person accounts (Langdridge and Hagger-Johnson, 2013) on my phenomenon through conduct of my one-to-one audio-recorded interviews.

My participants' verbatim data was transcribed to generate lexical data (Hesse-Biber, 2016). I repeatedly listened to and read my participants'

interview transcripts. Hereafter, I will refer to a transcript as each participants 'datum-set'. I did this to notice commonalities and sense connections within shared and recurring content (Braun and Clarke, 2013) on how and why my participants experienced my phenomenon the way that they did (Hartas, 2015). In preparation for my analysis of "initial noting" and inspired by Braun and Clarke's eight-stage interpretative phenomenology analysis matrix (2013, p. 202 - 203; table 9.1) I developed a 'concept-book' (Brenner, Brown and Canter, 1985) this was a notebook incorporating my "thinking tool" (Giddings and Grant, 2007, p. 54) for systematic engagement with my data [see 3.2.2; Table 14]. Meaning that as I repeatedly heard and saw my data I noted the obvious ideas within my 'concept-book' that were triggered as salient to me (Braun and Clarke, 2013).

I used password protected Microsoft® Office Word™ to store my raw data and an Excel™ spreadsheet (Microsoft® Office™, 2013) to collate and examine it enlisting the software functions of dictionary and e-thesaurus in conjunction with 'word search and find' facilities. I did this to enable my understanding of the wording my different participants used in their descriptive language. My interpretation method involved recognising descriptive lived explanation and meanings as pertaining to segments of my raw datum within each of my eight transcripts (Braun

and Clarke, 2013). I annotated datum with “free associating” comments inspired by my ‘concept-book’ (Brenner, Brown and Canter, 1985) focusing on the language my participants used to communicate and express their experience (Smith, Flowers and Larkin, 2009). By this I mean that I added my own abstract and conceptual comments on what my participants experience was.

I colour-coded these emergent comments into categories (Miles, Huberman and Saldaña, 2014) of ‘social relations’, ‘psychological relations’, ‘physical deficit’ and ‘pedagogical need’. I further partitioned my categories into typologies (Patton, 2014) or sub-ordinate themes of ‘diversity’, ‘homogeneity’, ‘inclusion’, ‘exclusion’, ‘equality’, ‘inequality’ and ‘help with learning’. To determine the significance of and find dominant categories of “themes and subordinate themes” (Braun and Clarke, 2013, p. 203) I produced a tabulated representations of the occurrences of my categories [see 4.4; Table 30]. My organised table enabled me to understand the prominent themes from my sample-group experiences of my phenomenon (Miles, Huberman and Saldaña, 2014) [see 5.2].

My analysis [see 4.4] and synthesis [see 5.2] constituted documentary form and the trustworthiness and reliability of my interpretations or

hermeneutic practices were its hallmarks (Thorne, 2016). Meaning that my methodological processes were key to my search for the 'truth' of meaning as perceived and interpreted by me as researcher (Gadamer, 2004). Using phenomenological methodology I tried my best to access, interpret and communicate my participants' human experiences (Standing, 2009) [see 5.2].

As my full interpretative depiction of my phenomenon was inherently reductionist it would be naïve and remiss of me to believe that I was capable of being theoretically impartial (van Manen, 2016). By this I mean that the lived-life of my phenomenon was more complex than my interpretation of meaning permits (Smith, 2007). An enormous challenge in my thesis report has been my attempts to make my participants' experience as comprehensive and clear as I possibly could in my textural interpretations. I mean that I strived to retain the fullness and completeness of detail and fidelity to my participants within my phenomenon under study (Cohen, Manion and Morrison, 2017) [see 5.2].

Using my 'concept-book' (Brenner, Brown and Canter, 1985) I interpreted my data with a special focus on diversity, inclusivity and equitability (LSBU, 2017) as this held personal significance for me in

generating and reporting new knowledge on my phenomenon of interest (FHEQ, 2008) [see 4.4]. I generated my new theory by applying wisdom from my own accumulated professional *a posteriori* knowledge (McConnell-Henry, Chapman and Francis, 2009) [see 5.2]. Meaning that as a stage-four lecturer/practice educator (NMC, 2008) with dyslexia, I used my interpretive interaction with my data as a “meaning-maker” (Dewar, 2016, p. 10) to generate explanatory findings [see 1.2]. Here my own *a priori* knowledge and understandings, as a nurse educationalist, on my phenomenon were valuable as they assisted in me achieving deeper *a posteriori* understanding of my participants’ experience (Flood 2010). Overall my personal knowledge on dyslexia was an integrated part of my research findings and I used this subjectively to make my research more meaningful in the ways that I explained my findings (Thorne, 2016) [see 5.2].

My enquiry combined and intentionally used mixed-methods (Hay, 2016) where I ensured the preservation and integrity of each methodology (Hammersley, 2013). This approach made use of each paradigm’s underlying epistemological, ontological and methodological traditions (DeCuir-Gunby and Schutz, 2016). I used these paradigms (Creswell, 2013) to generate an integrated perspective (Harvey and Land, 2016) for the completeness of my quantitative [see 4.2.3] and qualitative data

analysis [see 4.4] and synthesise the reality of being a student nurse with dyslexia [see 5.0].

These paradigms facilitated a valuable illumination of different aspects by tapping different types of knowledge (Roberts and Priest, 2010). The combination enabled my lens on different world views (Jacobsen, 2016) and assisted my interpretation of complex, inter-related aspects of participant perspective (Merleau-Ponty, *in Cobb translation by Edie* 1964) and lived-experience (Heidegger, 1962). My qualitative data yielded expansive insights into explaining the experience of being a student with dyslexia in practice placements, whereas my quantitative data provided a more structured, yet shallower, description on the perception of this experience.

My mixed-methods enquiry (DeCuir-Gunby and Schutz, 2016) capitalises on the respective strengths of both approaches (Andrew and Halcomb, 2009), recognising the existence and importance of the physical natural world, as well as the importance of social reality and influence of human experience (Östlund *et al.*, 2011). By this I mean that my research focused on the psychosocial-cultural situations that occurred naturally between student-environment and mentor-student in practice placements. I believe that the student-mentor relation was

deliberate in that they act intentionally with symbolic-interactionism (Blumer, 1969) and that *a posteriori* subjective meanings of the situation were formed by my participants.

To mix my methods together I used triangulation at three critical points in my research process (Andrew and Halcomb, 2009). Firstly I triangulated my sampling where my interview participants were all sourced from my group of e-survey participants (Palinkas *et al.*, 2015) [see 3.4.3].

Secondly I triangulated my data collection where early analysis on some of my e-survey questions [see 4.2] informed areas for exploration in my interviews (DeCuir-Gunby and Schutz, 2016) [see 3.5.2]. Thirdly my participants' perceptions and experiences triangulated or intersected in the narrative from my descriptive analysis [see 4.2] into my interpretive findings (Morse and Niehaus, 2016) [see 5.2].

Dual-level syntheses of results and findings was employed for my full data analysis. Quantitative evidence [see 4.2] for synthesis of my descriptive theory [see 5.1] was conducted as a separate stream and the product of this synthesis was then combined with my qualitative evidence [see 4.4] for synthesis of my interpretative theory [see 5.2].

Also at synthesis of my descriptive theory the results from studies using Chan's questions (2001) were juxtaposed alongside, and at synthesis of

my interpretative theory the findings of studies on my phenomenon were synthesised in parallel.

3.1.1 Interpretative phenomenology

My research on student experience would hold shortcomings were it to fully constitute my quantitative e-survey (Knowles, 2010a) enquiry on my participants' perceptions on the quality of practice placements and mentor support (Hartas, 2015). I tried to find what was meant but failed to as this method was mechanistically-conceived meaning it was atomistic, static (Gray, 2013) and prohibitive as it was substance-based (Hartas, 2015) where participants answered only my set 19 questions (Salamonson *et al.*, 2011). There was no place within this medium for my participants to offer-up any free text explanation about why they perceived the answer to be the one they selected [see 3.5].

I agree with Heidegger (1962) who critiqued the assumptions and ability of a scientific, reductionist and descriptive method to explain human science in the natural world. My quantitative e-survey (Knowles, 2010a) did not deal with complex and dynamic issues of explaining what it was actually like to be part of my phenomenon. The crux of my study was to find out my participants' experience of being in this contextual phenomenon.

Phenomenology was inextricably linked to my participants (Levering, 2006) and so the qualitative component of my study employed an ontology-based interpretative phenomenological methodology (Polit and Beck, 2012). This means that my enquiry was in pursuit of understanding and explaining the meaning as ontology and this means the nature of being (Heidegger, 1962). I understand this to mean that I wanted to find out what it was actually like for my participants living my phenomenon. This involves their inter-relationships between being my selected phenomenon as a student nurse with dyslexia and being within my selected field of phenomenon as practice placements (Levering, 2006) [see 5.2.4]. I did this through an attentive thoughtfulness of 'what' it means for my participant to live a life in practice placement (van Manen, 2016) [see 3.5.2]. I was interested in my phenomenon from the perspective of the meanings that my participants made of their experiences (McConnell-Henry, Chapman and Francis, 2009). I think that my enquiry was inward-facing to find out what was in my participants minds (van Manen, 2016) because the quantitative paradigm of the natural world held nature as inclusive of meanings and of mind (Harney, 2015). I wanted to capture my participants' experience on what it actually feels like in the natural world of my phenomenon (van Manen, 2016). My phenomenological enquiry engages with people's experiences and the subject of phenomenological interest often sits with

people who were usually ignored such as a marginalised group like those with dyslexia (Levering, 2006).

For each step of my qualitative research process I became an interpretive or hermeneutical phenomenologist (Parahoo, 2014) in search of the truth on direct concerns about my phenomenon (van Manen, 2016) from my participants' first-person perspective of a *posteriori* knowledge and meanings (Harney, 2015). I wanted to know their common, taken-for-granted experiences (van Manen, 2016). I wanted to capture different viewpoints to understand the experiences that contributed to the perceptions and attitudes that my sample-group had provided in my e-survey (Knowles, 2010a). Ontology-interviews with eight of my participants enabled me to capture information on how they identified themselves as a student with dyslexia and how they experienced the natural world of mentor support, just as they see it, and what it means to them [see 3.2.2]. I wanted to understand and explain the *a posteriori* knowledge that my sample-group shared (Nind, Curtin, and Hall, 2016) on how they experienced their practice placements and why they experienced them the way that they did (Hartas, 2015) [see 3.2.2].

I chose hermeneutical enquiry (Parahoo, 2014) as this would enable me to focus on each of my participants' [see 3.4.3] first-person perceptions and the sense they made of their experiences which formed their psychological understanding of their reality (Östlund *et al.*, 2011). I think that what my participants describe as their reality was real and was their reality (Thomas, 1928). My participants' lived-experience was influenced by their own *a priori* social constructs (Ritchie *et al.*, 2013) of being a person with dyslexia and their own cultural constructs (Flood, 2010). It was this psychosocial-cultural understanding that formed their world view (Matua and Van Der Wal, 2015) and shaped their experiences of being (McConnell-Henry, Chapman and Francis, 2009) [see 5.4].

My participants themselves were each embedded and inextricably linked into their own psychosocial-cultural context (Östlund *et al.*, 2011; Ritchie *et al.*, 2013 and Flood, 2010). Their own constructed reality influenced how each one individually interacted and experienced their world of practice placements (Östlund *et al.*, 2011). These interactions inform my participants own *a posteriori* knowledge and subjective interpretation of experience in practice placement (McBride and Cutting, 2015). In turn these interpretations form their subjective understanding of their experience (Grove, Gray and Burns, 2015). Understanding was interpreted from within the student's own *a priori* usual landscape or

world view (Ritchie *et al.*, 2013) and students further construct their world view *a posteriori* according to their hermeneutic interpretation of each new experience (Husserl, 1964; 1983).

My psychosocial-cultural understanding of each student's experience relies on the assertion that people's realities were invariably related to the world in which they live, since they cannot abstract themselves away from their own lifeworld (Dumez, 2016). It was *a posteriori* knowledge that my participants gave in response to my questions [see 3.2.2] and it was these representations that I collected as my interview data through my purposeful (Palinkas *et al.*, 2015) and planned method of interactive interview [see 3.5.2]. I therefore recognised that the psychosocial-cultural context boundedness of my enquiry was important within my phenomenology methodology (Cohen, Manion and Morrison, 2017). During the interpretative phenomenological data analysis phase of my research I examined how my participants interpreted the effects of their dyslexia in how it affects them in practice placements (Thorne, 2016) [see 4.4]. Therefore I see my research as a double hermeneutic process meaning that as researcher I lived in the already interpreted world. By this I mean that my participants had already reflected on and brought meaning to the reality of their first-person lived-world to rate these as

perspectives in my e-survey and describe meaningfully lived experiences in my interviews (Hay, 2016).

My interpretative research processes construct subjective meaning (Grove, Gray and Burns, 2015) of my phenomenon [see 5.4.2] and I examined it from my *a priori* perspective on my phenomenon in relation to diversity, inclusion and equality (LSBU, 2017) and why this affects behaviour (Hartas, 2015) [see 4.4]. With my interpretative phenomenological data analysis methods I uncovered meanings (Streubert and Carpenter, 2011) in my participants' accounts in relation to *a posteriori* knowledge on their experiences of diversity, inclusion and equality and the usage of reasonable adjustments in practice placements as constructs of their psychosocial-cultural reality (Streubert and Carpenter, 2011).

My reported findings [see 5.0] construct my *a posteriori* relative world view of my research study data (Ritchie *et al.*, 2013). My analytical processes generated new knowledge about the defining features of my phenomenon (Matua and Van Der Wal, 2015). Notably I have no monopoly of wisdom on my phenomenon, being one student-researcher with one sample of data (Cohen, Manion and Morrison, 2017). For my phenomenon to become more visible and intelligible for others

(Streubert and Carpenter, 2011) I have rigorously followed trustworthy and reliable rules of the research community as an interpretative phenomenologist at every step of my research process and included the full details of these within this thesis (Heale and Twycross, 2015) [see 3.5.2 and 4.4].

3.2 Instrumentation for my data collection

I asked myself what I wanted to know and considered how the best way to understand it would be (Willig, 2013). I chose to use a descriptive survey method of quantitative enquiry as I believed that this would generate psychometric data (University of Cambridge, 2015) from my participants that described their perceptions of practice placements as a learning environment (Merleau-Ponty, *in Cobb translation by Edie* 1964). I defined my participants' perceptions as their individual unique way of viewing my phenomenon incorporating their "memories and experiences in the process of understanding" (McDonald, 2012, p. 7). As perception was unique, I decided to initially analyse individual participant perceptions of my phenomenon [see 4.2.1].

The nature of perception was psychological with behavioural and cognitive components (Ho, 2017). Perception or awareness may not imply a conscious experience, meaning that things could have been

consciously perceived by my participants that really weren't there (Garrison *et al.*, 2017). Perception processing takes place outside of the conscious awareness (Anzulewicz *et al.*, 2015) and involves subjective feeling and judgment (Schnall, 2017) therefore like bias (as an example), it may be formed without awareness of what's actually there (Mitchell and Greening, 2012).

I thought my participants' conscious perceptions were the result of what they had previously encountered in practice placements. Because "we can only perceive what we can elaborate into concepts" (Khachouf, Poletti, and Pagnoni, 2013, p. 3). I think my participants had created a lens for interpreting and understanding the meanings that they had attributed as relational to their identity (Holland and Lachicotte, *in* Daniels, Cole and Wertsch, 2007). By this I mean that each participant sees the world from their own point of view (Cohen, Manion and Morrison, 2017).

Perception repeats upon successive presentations of the same stimulus (Snyder *et al.*, 2015). This implies that the extended exposure to stimuli in the practice placement context develops my participants' perception and understanding of their dyslexia (Guest, Namey and Mitchell, 2012). My participants' perception was dynamic as it was "always changing"

(Varela, Thompson and Rosch, 2016 p, 70) and developing according to how they each viewed reality following conscious consideration of the event or causal reasoning (Waldmann, 2017).

An *a posteriori* knowledge and understanding adjusts people's minds to optimise the recognition of stimuli (Schnall, 2017) and therefore previous experiences within my phenomenon of interest heightened my participants cognitive appraisal of each question (Snyder *et al.*, 2015) as they tapped into their subjective perception whilst completing my e-survey (Knowles, 2010a). There were many factors influencing how my participants made each perceptual judgment and provided their answers (Schnall, 2017). Previous experiences shaped their positive or negative attitude (Altmann, 2008) to each of my e-survey questions (Knowles, 2010a) and these were based on their feelings, values and belief in response (Rokeach, 1973).

I think that 'perception' was to have an understanding of the quantitative phenomenon (Merleau-Ponty, *in* Cobb *translation by* Edie 1964) [see 5.1] and my qualitative enquiry on 'experience' was to discover the understanding around events on practice placements that my participants had gained through involvement in and exposure to it (Heidegger, 1962). There may be general commonalities of perception

and experience among groups of people, such as my sample-group who hold the shared characteristics of my phenomenon. Communities of people hold a unique way of viewing things (McDonald, 2012) so in addition to analysing individual participants' results, I also analysed the community of my sample-group perceptions on my phenomenon [see 4.2.2].

I was interested in finding out about my participants' lived-experience and one aspect of this was to capture the reasons for their perception and attitude responses to my e-survey (Knowles, 2010a). I thought that these results may be related to real underlying reasons from their experience (Wilson and Dunn, 2004). I utilised ontology-interview methods of data collection to discover more on the nature of being within my phenomenon. I did this because the numerical score in the linear approach to my quantitative results only served as a global indicator of my phenomenon and did not adequately capture the complex, multidimensional construct of it (Ho, 2017). By this I mean that the numbers from my descriptive and inferential statistical analysis did not accurately reflect the true significance or magnitude of my phenomenon (Norman, 2010) and I did not assume that the factors contributing to the experience of my phenomenon were the same.

By using ontology-interview methods I was able to add to my e-survey (Knowles, 2010a) participant perceptions on ‘how much’ [see 4.2] with ‘what’ [see 4.4] my participants experienced on the quality of practice placements and mentor support (Andrew and Halcomb, 2009). My mixed-methods were my “doing tools” (Giddings and Grant, 2007, p. 54) that combined to provide the data I needed (Östlund *et al.*, 2011) and these two methods were each carefully selected.

3.2.1 E-survey method using Chan’s questions

I selected Chan’s questions (Chan, 2001) for my research as this standardised assessment tool enabled data collection on the conceptual framework of learning environment research (Chan, 1999). Chan adjusted the “College and University Classroom Environment Inventory” (Fraser and Treagust, 1986 *cited in* Chan, 1999, p. 42) which was based on Knowles’s (1990) theory of adult learning and Moos (1974) classroom environment scale into a second-generation instrument suited to the practice placement learning environment. Moos (1974) identified three dimensions that characterise human environments as dimensions of: relationship; personal and systems as maintenance and change. I view these as: symbolic-interactionism in student-mentor relations (Blumer,

1969; Wilkes, 2006); psychosocial constructs and organisational culture [see 3.2.1.2].

Chan (1999) developed the 'Clinical Learning Environment Inventory' to quantitatively assess the factors that characterise the 'actual' and 'preferred' climate of practice placements as perceived by student nurses. This was with a view to the development of strategies that foster the most desirable student learning outcomes during practice placements (Chan, 2000). I conceptually engaged with this from the perspective of developing optimal practice placement learning environments for students with dyslexia [see 8.1].

Chan's survey (Chan, 2000) originally contained 35 questions within five sets of: 'personalisation', 'student involvement', 'task orientation', 'innovation' and 'individualisation' with each set containing seven questions. Two versions of these questions were deployed sequentially (Chan, 1999), the 'actual' first 35 question set collected datum on the student perception of the actual practice placement learning environment. Whilst the 'preferred' identical second 35 question set concerned goals and value orientations and collected datum on the perception of the environment ideally liked by students (Merleau-Ponty, *in Cobb translation by Edie 1964*). The difference came within the

researcher's participants' instructions where they were asked to complete the first set on their perceptions relating to what the environment was actually like. In the second set participants were to rate what they would have preferred the environment to be like (Chan, 1999).

In total 70 individual judgements were made by participants during Chans data collection in 1997 with optional 'strongly disagree', 'disagree', 'agree' and strongly agree' responses to each of his questions (Chan, 1999). These were rated on a one-to-five-point Likert-scale (Likert, 1932) allowing Chan (2000) to process his data in a simple and standardised manner (Rattray and Jones, 2007) ranging from (1) 'strongly disagree' to (5) 'strongly agree'. The higher the score for the question then the more positive the students' perception was. The reversal of this scale showed a negative perception for lower scores and whether or not the reverse scale was applied depended on the way Chans questions were worded, and these were made identifiable only for researchers (Chan, 1999). The reverse Likert-score (Likert, 1932) questions were rated ranging from (5) 'strongly disagree' to (1) 'strongly agree' with total scores for each participants survey ranging from minus 175 to plus 175 (Chan, 2000).

In 2001 Chan added 14 questions so the 'actual' and the 'preferred' sets each contained 42 questions equalling 84 questions in total. All 42 questions were divided into sets of seven enquiring on a total of six areas of interest with the additional set of 'satisfaction' (Chan, 2001). This tool had a total Likert (1932) score for each participant's survey ranging from minus 210 to plus 210 (Chan, 2003).

Using Chan's questions (2001) in the form of my e-survey (Knowles, 2010a) my participants revealed their attitude response to these pre-set criteria. By this I mean that they were limited to judging how (strongly) disagreeable or agreeable the answers were in relation to the questions provided. I subsequently used some of this data [see 3.5.1] to generate descriptive statistics (Salamonson *et al.*, 2011) and I organised my data into diagrams and tables of size and patterns to highlight interesting aspects about my sample [see 4.2]. I used my statistics to make inferences about my population and to inform my descriptive theory [see 5.1].

3.2.1.1 Construct validity of survey instrument

For methodological quality the consensus of the research community is to evaluate the methodological quality of studies on measurement properties (Mokkink *et al.*, 2010). Therefore the psychometric properties

of my e-survey (Knowles, 2010a) research instrument was important to me. Psychometric measurements were sourced that had established that Chan's survey instrument had good methodological properties (Chan, 2001).

Inter-correlations between pairs of items (questions) with item-total correlation are essential tests for the validity of Likert-scale (Likert, 1932) questionnaire instruments (Trochim, Donnelly and Arora, 2016). Chan (1999) computed the values of internal consistency for interrelatedness among the questions in each scale (Mokkink *et al.*, 2010) using Cronbach *alpha* reliability coefficients (Tavakol and Dennick, 2011). He did this to establish the extent to which the same scale measured the same dimension across questions by assessing the calculation of mean correlation with the other scales (Urdan, 2016). The Cronbach's *alpha* range across questions was high at 0.73 - 0.84 (Chan, 1999; 2000). As a Cronbach *alpha* of ≥ 0.6 was acceptable in survey instruments like Chan's (Cronbach, 1982) it was found that the 70 question tool was a valid and reliable instrument. The 84 question version (Chan, 2001) had a weaker Cronbach's *alpha* range across questions of 0.50 - to - 0.80 (Ip and Chan, 2005) 0.43 - to - 0.86 (Berntsen and and Bjørk, 2010) 0.55 - to - 0.76 (Papathanasiou, Tsaras and Sarafis, 2014) and poor internal consistency in a study by Lovecchio, DiMatteo and Hudacek (2012) with

a low to marginal Cronbach's *alpha* range across questions of 0.17-0.69.

Salamonson *et al.* (2011) abbreviated Chan's questions (Chan, 2001) into the 19 question survey that I used for my data analysis with total Likert-scale (Likert, 1932) scores for each participants survey ranging from minus 47.5 to plus 47.5 (Salamonson *et al.*, 2011). Cronbach's *alpha* for corrected item-total correlation (Cronbach, 1982) was used to determine the 19 question acceptable reliability coefficients (Tavakol and Dennick, 2011). In terms of internal consistency coefficient the results were very good with a Cronbach's *alpha* for domain one of 0.94 (satisfaction with clinical placement) and domain two of 0.92 (clinical facilitator support of learning). These psychometric properties are in strong support of the validity and reliability of their abbreviated version as a reliable tool to test the question criteria it sets out to measure (Trochim, Donnelly and Arora, 2016).

Brown *et al.* (2011) tested (Chan, 2001) to examine the degree to which the scores of the tool were an adequate reflection of the dimensionality of the construct to be measured (Mokkink *et al.*, 2010). They measured the Bivariate correlation *r* Pearson as convergent validity (Urdan, 2016) meaning the linear relationships between the outcome measure

satisfaction and other five sub-scales. Significant correlations were found at $r0.56$ with criterion validity $p\text{-value } p<0.0001$ between the Chan's (2001) descriptors of 'satisfaction' and 'personalisation' was resultant (Brown *et al.*, 2011).

In a previous validation calculation Berntsen and Bjørk (2010) had found this to be $r0.68$ with a positive relationship between 'satisfaction' and 'personalisation' $r0.497$ with a $p\text{-value}$ of $p<0.005$. In another validation Papathanasiou, Tsaras and Sarafis (2014) also found a statistically significant positive relationship between these subscales with a high confidence level (normal distribution) of 95% and low confidence interval or margin of error 0.08-0.36 and a resultant $p\text{-value}$ of $p<0.002$. The standardised *Beta* weight was $\beta0.29$ (Berntsen and Bjørk, 2010) and $\beta0.22$ (Papathanasiou, Tsaras and Sarafis, 2014) suggesting that 'personalisation' is closely linked with the student's 'satisfaction' during their practice placement (Urdan, 2016).

The R^2 coefficient static of $R^20.46$ (Papathanasiou, Tsaras and Sarafis, 2014) and $R^20.47$ indicated that 'personalisation' reached statistical significance in explaining 46-47% of the variance in the students' level of 'satisfaction' of their clinical experience (Mokkink *et al.*, 2010). In other words 'personalisation', was found to be a significant predictors of

student nurses level of self-reported 'satisfaction'. However $f=53.58$ does indicate that 54% of the variance was not explained by the regression model (Papathanasiou, Tsaras and Sarafis, 2014) and Brown *et al.* (2011) would therefore advise that further studies should be conducted to consider the factors that influence student satisfaction.

Salamonson *et al.* (2011) tested their abbreviated survey instrument to examine the degree to which the scores of the tool were an adequate reflection of the dimensionality of the construct to be measured (Mokkink *et al.*, 2010). They did this with Kaiser-Meyer-Olkin (KMO) criterion (Roy, Acharya and Roy, 2016) for principle component analysis to extract or retain question components of Chan's (2001) 84 question survey (Mokkink *et al.*, 2010). Structural validity was strong as the principal component analysis factor for domain one had an eigenvalue >1 (Urdan, 2016) at $\lambda 5.36$ and accounted for 20.28% of the variance, with seven questions loading on this factor labelled 'satisfaction' (Salamonson *et al.*, 2015). Domain two was $\lambda 6.68$ and accounted for 35.17% of the variance, with 12 questions loading on this factor, containing the common phrase 'clinical facilitator support'. The highest explained variance estimated was 63.3% which demonstrates good methodology. Factor loadings of all 19 questions were also good as they were above the 0.4 factor loading threshold ranging from 0.49 to 0.88 (Urdan, 2016).

Reliability is the proportion of the total variance in data that was due to true differences among practice placements as well as the extent to which scores are the same for repeated measurements with test-retest evaluation of methodological quality (Mokkink *et al.*, 2010). The reliability of (Salamonson *et al.*, 2011) was not computed in the subsequent study by McInnes *et al.* (2015) [see 5.1.2.1] and nor is it computed here in my own study. This is because I am self-taught in simple descriptive statistical analysis [see 4.2.2] and I have reached the limitations with my statistical skills set. I have been unable to source the support of a statistician through either professional employ, or as a doctoral student for the psychometric testing of my studies validity in relation to Salamonson *et al.*'s (2011) and McInnes *et al.*'s (2015) studies.

I acknowledge that it is desirable for this to be undertaken (Mansutti *et al.*, 2017) and reported in a publication for fellow researchers in this field after completion of my doctoral degree studies. For example in my study correlations between instrument scores and other variables (Mokkink *et al.*, 2010) of the key common characteristics of gender, current age range grouping and ethnic background could be computed. Also the educational variables with regard to the academic year attended and field of study along with the macro-variables consisting of age of dyslexia diagnosis, whether diagnosis was before or after starting

nursing course and how the participant characterises themselves as yes disabled or not disabled. These correlations could all be computed from my reporting data in partnership with a statistician [see 4.1 and 5.1.1].

Reporting hypothesis results in validity testing studies is another important psychometric measurement (Mokkink *et al.*, 2010). My study did not set out to test a hypothesis [see 3.1] but Salamonson *et al.*'s (2011) did use hypotheses testing and they reported an explained variance of 63.3% (Mansutti *et al.*, 2017). However a retrospective hypothesis could be applied to my study, such as 'a community of student nurses with dyslexia are satisfied with their practice placements and experience good mentor support' and this could be shown to be statistically proven or disproved in my reported data [see 5.1.2].

The standard error of measurement or smallest detectable change which are the random and systematic error of a respondent score that is not attributed to true changes in the construct under measurement (Mokkink *et al.*, 2010) are rarely reported in validation studies of the clinical learning environment. Mansutti *et al.* (2017) recommend that researchers in this field report on this result and this is something to be addressed from my study data with a statistician post-doctoral studies.

Criterion validity is a comparison of the Clinical Learning Environment Inventory (Chan, 1999 and 2003) with an acknowledged gold standard instrument (Mokkink *et al.*, 2010) for example the Clinical Learning Environment Scale validated by Dunn and Burnett (1995) and the University Classroom Environment Inventory (Fraser and Treagust, 1986 *cited in* Chan, 1999, p. 42). In his publications Chan (2001 and 2003) did not specify which comparative instruments were considered and this shows poor methodology quality (Mansutti *et al.*, 2017). Moreover, the correlation values that emerged were poor from 0.39 - to - 0.45 (Chan, 2001 and 2003).

In their validation studies Salamonson *et al.* (2011 and 2015) did not compare their abbreviated tool (Salamonson *et al.*, 2011) for criterion validity (Mokkink *et al.*, 2010) with either the revised CLES Clinical Learning Environment and Supervision Scale (Saarikoski *et al.*, 2005) or with the Clinical Learning Environment Instrument (Chaun and Barnett, 2012) and therein lies a missed opportunity for strengthening the methodological validity of their instrument and informing the research community about this property (Mansutti *et al.*, 2017).

Overall it is clear that the abbreviated 19 question tool (Salamonson *et al.*, 2011) has greater validity than the original 70 question (Chan, 1999;

2000) and the revised 84 question surveys (Chan, 2001; 2003). Also Salamonson *et al.*'s (2011) version of Chan's tool (2001) overall held excellent psychometric properties as a standardised survey tool (Mokkink *et al.*, 2010) and so I elected this for the selection of 19 questions from my e-survey (Knowles, 2010a) [see 3.5.1] data for descriptive analysis [see 4.2] and reporting my research results [see 5.1].

3.2.1.2 Content validity of survey questions

The methodological quality of content validity is to assess the concepts and constructs for their significance and judge them for their relevance and comprehensiveness for my target population (Mokkink *et al.*, 2010) [see 3.4]. Evidence was sourced to establish whether or not Chans survey instrument measured what it claimed to be measuring (Chan, 2001). Chan (1999) explained that educational environments held a climate or atmosphere with psychological and social (psychosocial) influences. These constructs were characterised in practice placements through mentor-student and student-environment interactions. Chan framed student behaviour with the Lewinian formula $B = f(P, E)$ (Lewin, 1936, p. 34) where behaviour (B) was a function (f) of the two factors which make up the situation i.e. both the person (P) and environment (E) (Chan, 1999).

Chans questions (Chan, 2000) measured the psychosocial individualised perceptions of this climate in association to the criterion perception of it being conducive to learning (Merleau-Ponty, *in Cobb translation by Edie* 1964). Characteristics of situations (Lewin, 1936) included student-environment attitudes and behaviours and mentor-student interpersonal relation. It was the “students’ perceptions”, not experience of the criterion that was captured (Chan, 1999, p. 8). Student perceptions were formed from “feelings influenced by the climate” (Chan, 1999, p. 11) that “facilitate or impede” their learning (Chan, 1999, p. 19). These perceptions were formed “indirectly” from the educative quality of the environment and “directly” from the quality of mentorship (Chan, 1999, p. 44-45).

Chan claims that his survey instrument measures perception through the questions contained within it (Chan, 1999). I examined the face-validity of his questions to see how well his test measures the construct of behaviour or perception for which it claimed intention (Cohen, Manion and Morrison, 2017). In my expert opinion as a stage-four lecturer/practice educator (Benner, 2001, NMC, 2008) I agree that Chan’s questions (2001) appear to do exactly that. I take the abbreviated survey tool (Salamonson *et al.*, 2011) that sets out to measure student nurses’ perceptions of the mentor support for learning

(Chan, 1999), and the students' satisfaction with the practice placement learning environment (Chan, 2001) to actually measure what it sets out to measure (Cohen, Manion and Morrison, 2017).

To reduce any poor content validity further I asked my two pilot study students [see 3.2.3] for peer opinion (Mokkink *et al.*, 2010). I consider this essential as the practice placement experience is subjective and it is therefore important to elicit elements that influence the quality of the experience as perceived by members of my target population (Mansutti *et al.*, 2017). They provided their view of the questions themselves (Mokkink *et al.*, 2010) and resultantly the wording was refined to reflect the pan-London language of practice placements and stage-two nurse mentors (NMC, 2008) and the past tense as my participants will provide answers to Chan's questions (2001) for practice placements that they have already undertaken [see Table 13].

I measured my questions (Knowles, 2010a) difficulty of readability with Flesch (1948) and attained a score of 65.3 which means the format of my questions is standard/ average (60-69) and readable. This is because the higher the number ≥ 50 (up to 100), the easier the text is to read.

Chan (2001)	Salamonson <i>et al.</i> (2011)	Knowles (2010a)
The mentors usually consider my feelings	The clinical facilitator was considerate of my feelings	My mentor usually considered my feelings
The mentors talk rather than listen to me	The clinical facilitator talked to, rather than listened to me	My mentor talked at me rather than listened to me
I look forward to attending clinical placement	I enjoyed going to my clinical placement	I looked forward to going to my shifts on practice placement
The mentors talk with me personally	The clinical facilitator talked individually with me	My mentor talked to me like an individual
I am dissatisfied with what is done	I was dissatisfied with my clinical experiences on the ward facility	I was dissatisfied with what was done on practice placement
The mentors try his/her very best to help me	My clinical facilitator went out of his/her way to help me	My mentor tried hard to help me
I have a sense of satisfaction with this clinical placement	After the shift, I had a sense of satisfaction	At the end of my shift on practice placement I had a sense of job satisfaction
The mentors' instructions often get side tracked	The clinical facilitator often got sidetracked instead of sticking to the point	My mentor often got sidetracked and did not stick to the main points
Innovative activities are always arranged for me	The clinical facilitator thought up innovative activities for students	My mentor thought up innovative learning ideas for me
The mentors help me whenever I have trouble	The clinical facilitator helped me if I was having trouble with the work	My mentor helped me whenever I had trouble with my work
This clinical placement is a waste of time	This clinical placement was a waste of time	My practice placement was a waste of time
The mentors seldom go around talking to me	The clinical facilitator seldom got around to the ward/facility to talk to me	My mentor seldom spoke to me
This clinical placement is boring	The clinical placement was boring	My practice placement was boring
The mentors do not bother my feelings	The clinical facilitator was not interested in the issues that I raised	My mentor was not interested in my problems
I enjoy coming to this clinical setting	I enjoyed coming to this ward/facility	I enjoyed going to my practice placement
The mentors often plan interesting activities	The clinical facilitator often thought of interesting activities	My mentor often planned interesting activities for me
The mentors are inconsiderate towards me	The clinical facilitator was unfriendly and inconsiderate towards me	My mentor was unfriendly and inconsiderate to me
I seldom involve actively during debriefing sessions	The clinical facilitator dominated debriefing sessions	My mentor dominated our debriefing/reflective discussions
This clinical placement is interesting	This clinical placement was interesting	My practice placement was interesting

Table 13 - refined wording of questions for content validity

3.2.2 Ontology-interview method

Following my supplementary quantitative descriptive enquiry (Morse and Niehaus, 2016) I proceeded with my qualitative explanatory core study component of ontology-interviews (Gubrium *et al.*, 2012) [see 3.1.1].

There were five of my e-survey questions (Knowles, 2010a) that I chose not to triangulate into my interviews [see Table 14 - highlighted in grey] as the responses from my participants were either neutral or positive and I felt that there were other questions of more importance [see 4.2.2

and 5.1.3]. I devised a conceptual framework for the triangulation of the remaining 14 responses to questions from my e-survey (Knowles, 2010a) [see Table 14] that had shown my participants perceived poor practice placement quality along with negative perceptions of stage-two mentor support (NMC, 2008). It was these issues that I wanted to attain an in-depth explanation through interview [see Table 14 - highlighted in yellow].

My ontology-interview method (Gubrium *et al.*, 2012) enabled data collection on the conceptual framework of finding out ‘what’ my participants had actually experienced (Smith and Ceusters, 2010) in relation to my 14 questions on the quality of practice placements [see Table 14 - highlighted in pink] and mentor support [see Table 14 - highlighted in orange].

For the purposes of qualitative enquiry Chan carefully worded some relational questions to his survey and these were designed not to suggest any expected answer (Chan, 1999). I consider these questions to have good validity. By this I mean that they have both good face-validity in that the questions look as if they were claiming to measure what I want them to measure and good convergent-validity in that the two measures of questions in Chan’s survey (Chan, 1999) and those

proposed for qualitative research agree (Cohen, Manion and Morrison, 2017). I made the assumption that the validity of my interview [see Table 14] had comparable validity to my e-survey (Knowles, 2010a) [see 3.2.1.1]. Meaning that by using Chan's same quantitative survey questions (Chan, 1999) [see Table 14 - highlighted in yellow] and qualitative questions (Chan, 1999) [see Table 14 - highlighted in blue] I believed that I sought my participants' independent, spontaneous responses to my phenomenon in a valid way (Green, Camilli and Elmore, 2012) [see 3.5.2].

The criteria I have illustrated were my "thinking tool" (Giddings and Grant, 2007, p. 54) and my worldview (paradigm) that influenced my ontology-interview method (Gubrium *et al.*, 2012). These activities enabled me to devise a loosely structured *aide memoire* tool [see Table 14 - highlighted in green] and use this at interview. I devised this in advance of my semi-structured interviews taking place and I worded it to keep my data collection open (Edmonds and Kennedy, 2016). I also used it at my interpretative phenomenological analysis preparation stages (Thorne, 2016) in my 'concept-book' (Brenner, Brown and Canter, 1985) [see 4.4].

Clinical Learning Environment Inventory (CLEI®) survey questions within their scale descriptors (Chan, 2001)	
Chans original question# in brackets	
Abbreviated e-survey questions (Knowles, 2010a) on the quality of the practice placement (QPP) and mentor support (MS) (Salamonson et al., 2011) e-survey question= QPP# or MS#	
Satisfaction - extent of enjoyment of practice placement:-	
How do participants describe the actual practice placement learning environment?	
I looked forward to going to my shifts on practice placement	3(3)
I was dissatisfied with what was done on practice placement	5(9)
At the end of my shift on practice placement I had a sense of job satisfaction	7(15)
My practice placement was a waste of time	11(21)
My practice placement was boring	13(27)
I enjoyed going to my practice placement	15(33)
My practice placement was interesting	19(39)
If you could change things what would you prefer the practice placement to be like in order to maximise your learning? (Chan, 1999, p. 56).	
Personalisation - emphasis on opportunities for individual student to interact with mentor and mentors concern for student's personal welfare:-	
What equitable and inequitable practice placement experiences are described by participants?	
My mentor usually considered my feelings	1(1)
My mentor talked to me like an individual	4(7)
My mentor tried hard to help me	6(13)
My mentor helped me whenever I had trouble with my work	10(19)
My mentor seldom spoke to me	12(25)
My mentor was not interested in my problems	14(31)
My mentor was unfriendly and inconsiderate towards me	17(37)
How do you perceive your relationship with your mentor?	
Do you believe your mentor has provided adequate support to your learning needs? (Chan, 1999, p. 56).	
Student Involvement - extent to which students participate actively and attentively in clinical discussion:-	
What are the inclusive and exclusive practice placement experiences of participants?	
My mentor talked at me rather than listened to me	2(2)
My mentor dominated our debriefing/reflective discussions	18(38)
Do you believe your mentor provided you with opportunities to be involved with your learning experiences? (Chan, 1999, p. 56).	
Task Orientation - extent to which placement activities are made clear and well organised:-	
What reasonable adjustments in the practice placements are experienced by participants?	
My mentor often got side-tracked and did not stick to the main points	8(16)
Do you believe the activities with your mentor were well structured and benefited you? (Chan, 1999, p. 56)	
Innovation - extent to which mentor plans new, interesting and productive experiences, teaching techniques, learning activities and patient allocations:-	
What practice placement experiences meet and do not meet the diverse needs of participants?	
My mentor thought up innovative learning ideas for me	9(17)
My mentor often planned interesting activities for me	16(35)
Do you believe your mentor provided you with innovative learning strategies?	
Have you been treated differently according to your ability? (Chan, 1999, p. 56).	

Table 14 - conceptual framework for my interview questions

I wanted to know what concerned my participants most (van Manen, 2016) and find out why they experienced the quality of practice placements and mentor support the way that they did (Smith and Ceusters, 2010). I knew that I played a key role at interview in the overall process and shaping of my raw data (Willig, 2012).

To stay close to my phenomenon I asked each participant to think about a specific instance, situation, person or event to describe (van Manen, 2016). I wanted to explore each experience to the fullest so I encouraged talking in detail about their personal life (anecdotes, stories, experiences, incidents etc.) and encouraged my participants to express this verbally.

I conducted my interviews informally [see 3.5.2] encouraging participants to air general issues regarding their dyslexia deficit in the context of practice placements. I did this by asking what was most important to them about their functions and feelings in relation to my phenomenon (Langdrige and Hagger-Johnson, 2013). On occasion I intervened to turn my participants discourse back to the significance of them and what it means to them (van Manen, 2016) by saying “what was that like please?” or “please tell me, how did that make you feel?” I asked for my participants to take a ‘say it as it is’ approach with a direct description of their psychosocial-cultural interactions without casual explanations or interpretative generalizations (Merleau-Ponty, *in Cobb translation by Edie* 1964) [see 3.5.2]. I was aware that my interview process and interaction itself between me as researcher and the student nurse as participant held multiple ethical implications [see 3.3].

3.2.3 Pilot study of my data collection tools

My pilot study served a critical function in identifying potential roadblocks and issues that needed to be addressed for the successful conduct of my full-scale study (Thabane *et al.*, 2010) [see 3.5]. My activities involved the assessment of my planned research process and data collection tools to see if they were fit for practice and fit for purpose. I wanted to know the practicalities around using these instruments (Arain *et al.*, 2010) [see 3.2]. I did this activity as a “dress rehearsal” (Brooks and Stratford, 2009, p, 66) with a paper-based version of Chan’s questions (2001) on a very small pilot-scale as a postal questionnaire with two of my personal students who were both very keen to help me develop my research process (Loscalzo, 2009). I did this on my own without funding and realised the scale of costs involved for my full-scale study (Thabane *et al.*, 2010) and that is would be a cost reduction with e-survey administration (McPeake, Bateson, and O’Neill, 2014). Following my pilot I converted the paper-based survey instrument (Chan, 2001) into an e-survey format (Knowles, 2010a). Although this required initial effort it was advantageous in the later research steps for ease of data transfer for analysis (Jones *et al.*, 2008) which was of importance within a fairly short time period of my doctoral degree studies (FHEQ, 2008; LSBU, 2017).

I also interviewed some of my personal students to ‘find my feet’ by upskilling myself with prompting on situations experienced and probing for their views (Jootun, McGhee and Marland, 2009) ready for the full-scale ontological-interviews. I resultantly developed my *aide memoire* into a conceptual tool of areas to be covered and I decided to also share this resource with students for prompts during my interview itself [see 3.2.2; Table 14].

3.3 My ethical considerations and approvals

I wanted to attain a detailed understanding of ethical considerations (FHEQ, 2008). This was because good research governance (DH, 2005) requires me to explain what I planned to do and why I planned to do it (Fugard and Potts, 2015). I was entirely responsible for safeguarding the anonymity and confidentiality of participants under the LSBU Code of Practice (LSBU, 2006). I also worked within the legal obligations imposed by the Data Protection Act (Great Britain. Data Protection Act, 1998) to protect and maintain the anonymity and confidentiality of my participants (DH, 2005; LSBU, 2006). The ethical issues I applied during my study were autonomy including voluntary participation, confidentiality and no harm or opposes to the welfare or beneficence to my participants (RCN, 2009; WMA, 2013). I was granted full-ethical approval in August

2011 [see 11.0; Appendix 11.1] and registration of my doctoral degree in March 2012 [see 11.0; Appendix 11.2].

3.3.1 Autonomy

One of the guiding principles of my ethical conduct was autonomy where each of my individual participants gives consent without duress, withholding information, coercion or undue influence (DH, 2005; RCN, 2009). An important aspect of this was communicating with my prospective participants in a clear and detailed way about my study and my intentions for this. My documentation sets i.e. participant information sheet and consent forms had been developed with guidance from LSBU research and ethics committee before gaining their approvals to proceed with my study. Participation involved implied consent by voluntary choice (WMA, 2013) of clicking on a link to Google® docs™ and completing my e-survey (Knowles, 2010a) which included a demographical survey [see 3.2.1].

At the end of my e-survey there was an invitation to contact me by email to participate in an interview with me. To let me know that they wanted to take part my e-survey participants were invited to email/mobile phone me with their contact details, and this personal information was only used by me for the purpose of making contact to arrange a convenient

interview date and time (Great Britain. Data Protection Act, 1998), along with any meeting arrangements for member checks (Great Britain. Freedom of Information Act, 2000). These participant's email addresses and mobile phone numbers were held within a password protected computer to which only I had access (Great Britain. Data Protection Act, 1998).

For my participants who volunteered to take part in a face-to-face interview with me [see 3.4.3], I emailed them my study consent form and interview *aide memoire* at least 24 hours before the informed written consent took place (BERA, 2011). This provided participants with a *a priori* reflective period to consider whether or not they would like to participate in my interview (DH, 2005).

Before their interview took place I explained in detail what my study entailed, the likely benefits of my study and the uses I'd make of their descriptions [see 1.4 and 8.1.3]. I outlined the foreseeable risks [see 3.3.3] and I reiterated that their participation was voluntary (DH, 2005; WMA, 2013). I answered questions that my participants had (RCN, 2009) and explained that at all times, all information provided would be held in the strictest confidence and that they were not to be identified at any time (Great Britain. Data Protection Act, 1998).

I then used my participant information sheet to check my participants' understanding of what they were agreeing to (RCN, 2009) by asking a few simple questions on the information I had given to gain some feedback. By this process I sought their informed consent to participate (DH, 2005). Whilst doing so I reiterated explicitly their right to withhold consent by refusing to take part (BERA, 2011), and that their continuing participation was entirely voluntary (WMA, 2013). Then I invited them to complete and sign the written consent form and then signed it myself (RCN, 2009). I reminded my participants that they were free to withdraw from my study at any time (RCN, 2009) and if any were to withdraw from the study then their interview information was not be included and would be destroyed by me, in line with BERA (2011) guidelines.

Assuring my participants' rights to access their own information within the Freedom of Information Act I offered them a photocopy or to photograph their own completed consent form for their own safekeeping (Great Britain. Freedom of Information Act, 2000). Only when these processes were completed did my interview itself commence (DH, 2005).

Following interview my eight participants were invited to give their verbal consent to check their interview transcription in an optional second meeting with me for the purposes of feedback and validation of their interview transcript through member checking (Great Britain. Freedom of Information Act, 2000).

3.3.2 Confidentiality

I acted as controller and custodian of all my research study information obtained (Great Britain. Data Protection Act, 1998). After gaining agreement to undertake my research from the department managers for all fields of pre-registration nursing, I contacted the Support Manager at LSBU Centre for Learning Support and Development to inform the DDS department team about my proceeding research. The prospective participants were identified by the DDS team through the LSBU database of students with a formal dyslexia diagnosis. On my behalf the DDS administrators used the email merge feature in Microsoft® Office Outlook™ to individually forward my email invitation to students ensuring that all email recipients were unable to see the email details of other students, and thus each student remained anonymous (Great Britain. Data Protection Act, 1998). The email had been compiled by me explaining my study, with an attached participant information sheet and interview *aide memoire*. This provided detailed, simple jargon free

information on the whole aspects of my study (RCN, 2009). The email invited students to take part in my research by clicking on a link to my e-survey (Knowles, 2010a). The names of the prospective participants were known only to the DDS team and not by me (DH, 2005). I did not have direct email access to students on the LSBU database and this data was safeguarded.

Demographic e-survey (Knowles, 2010a) data was only used to generate sample-group information and my participants' profiles for my thesis report [see 3.4] and subsequent publications (RCN, 2009). It was not used in any other way and individual surveys were not shared with any third party.

Those who participated in my study were not known by the DDS team or by me. This was because each participant's response to my e-survey (Knowles, 2010a) was anonymous and could not be tracked to their email address. It was guaranteed that the Google® docs™ (Knowles, 2010a) collated report on the Excel™ spreadsheet (Microsoft® Office™, 2013) was controlled so that I could not identify any individual participants and it was guaranteed that participant names and emails remained unknown to all parties (DH, 2005).

My interviews were not anonymous in that they were face-to-face with me. During my interviews participants were asked not to use any names of practice placement areas or names of placement staff, including mentors (NMC, 2008) to ensure anonymity and confidentiality of sensitive information shared (NMC, 2015a). At all times, any information given to me was held in the strictest confidence and no participant was identified by me to a third party at any time, in accordance with the Great Britain. Data Protection Act (1998). My interviews were confidential in that I did not reveal the names or identity of participants to anyone (DH, 2005; LSBU, 2006). I kept the data of participants contact details on a password protected personal computer (RCN, 2009) and the completed consent forms were kept separate from all other study information in an unmarked folder in a locked draw at the university that only I had access to.

The audio-recordings of my participant's interviews [see 3.5.2] were stored on my mobile digital recorder by participant number with the date and time of interview and did not have my participant's names (RCN, 2009). The recordings on this device were wiped once they were uploaded onto my personal computer that was password protected and to which only I had access. Interview transcripts and data was not filed under my participant's own name or contact details instead it was stored

by participant number and gender specific pseudonym identification [see Table 15]. All of the research participant information was tracked by use of allocated participant number and/or pseudonym. In my thesis and in subsequent journal publications and conference presentations I used direct quotation, but at no time was the individual participant to be identified by their own name. Instead I made use of my participant assigned number and or pseudonym (DH, 2005) [see Table 15].

Participant Number	Also either assigned a Female pseudonym	Or a Male pseudonym
1 st = 01	Ann	Adam
2 nd = 02	Beth	Ben
3 rd = 03	Cathy	Carl
4 th = 04	Doris	Dan
5 th = 05	Eva	Errol
6 th = 06	Freda	Fred
7 th = 07	Gill	Glen
8 th = 08	Helen	Harry
9 th = 09	Iris	Ian
NB: These pseudonyms did not match any of my interview participant's real names		

Table 15 - assigned names for qualitative interview participants

I planned that my raw data be kept for a maximum of five years after submission of my thesis to allow for marking, *viva voce*, amendments and exam board ratification of award [see 11.0; Appendix 11.3]. It may also prove useful as an *aide memoire* during preparations for dissemination of my research findings via meetings or conferences and for writing up journal articles. At the end of data and information storage the transcriptions and all data files, consent forms and diversity surveys will be destroyed by deletion and shredding.

3.3.3 Nonmaleficence

I considered that participants talking about their experience of disability [see 2.1.8.1] as a vulnerable group of people (BERA, 2011) each required safeguarding measures (ESRC, 2017) and I had the welfare of my research participant as my goal. Talking about their experience could potentially have evoked feelings of stress, which were currently there or had been there and may have been brought to the surface by my interview (RCN, 2009). I made plans for if a participant were to demonstrate any form of anxiety or distress, I would immediately cease my interview to give comfort and ensure that my participant was aware of their options to seek support through the university's student advice team or their personal tutor for pastoral care or a member of the DDS team.

I also thought that my questioning may elicit responses where my participants referred to poor professional practice of their stage-two mentors in practice placements (NMC, 2008). This could be where the mentor has not been fair or has been discriminative or prejudice because of the student's dyslexia. This constitutes poor professional practice within the NMC (2015) code and poor mentoring practice within the standards (NMC, 2008). Were a participant to state that their mentors conduct detrimentally affected their placement assessment

scores then I would have advised them to speak to their Course Director and consider raising an appeal with their student union's support.

If a complaint were raised about a specific NHS employee on practice placement, or were a participant to raise issues on any adverse treatment or harm caused to them (BERA, 2011; ESRC, 2017) through knowledge, practice or attitude deficit of their mentors (NMC, 2008) then they would be advised to discuss this with the NHS Practice Facilitator within the practice placement area. Alternatively the student can speak to the stage-four lecturer/practice educators from the university with appropriate placement 'Link-Lecturer' remit (Knowles, 2007; NMC, 2008). The Link-Lecturer would address the mentors learning needs about SpLD specific issues and for this process the student can remain anonymous (Great Britain. Data Protection Act, 1998) [see 3.3.1]. In these circumstances my participant would also be advised to seek support from the DDS team or a member of the student advice team or their designated Personal Tutor. If my participant just wished to confidentially share their challenging learning experience with me and no action was to be taken (RCN, 2009), then as researcher I may have met their need by confidentially listening to their issues (LSBU, 2006).

Given any of the above circumstances I would have checked for any sensitive digitally recorded information divulged during their interview dialogue that my participant wishes to be excluded from my data collection. I would do this by playing the recording back to them during my interview and deleting the excerpts they chose.

3.4 My sampling strategies

When I was planning for my data collection there were 36,875 nursing students (HESA, 2010) at 77 NMC approved (NMC, 2016a) UK universities. LSBU represented a large education provider with 974 of these (HESA, 2010) [see Table 16] studying either adult, mental health or child field nursing (NMC, 2010). Adult was the most popular and it accounted for two-thirds of the total student body [see Table 16 (HESA, 2010)]. There were 115 or 11.8% male students [see Table 16 (HESA, 2010)]. This proportion represented a higher than average national number compared to 2,980 or 8% UK population (HESA, 2010). It was also a slightly higher average compared to the 10% of males who formed the NMC registered nursing workforce at that time (NMC, 2008 *cited in* Knowles, 2010c).

Students were from a broad range of ethnic heritage. At LSBU there were fewer students from 'any white background' at 387 or 39.7% than

those of ‘mixed and other backgrounds’ at 587 or 60.3% [see Table 16 (HESA, 2010)]. This local demographic was not reflective of the UK as the nursing student population of ‘mixed and other backgrounds’ was only 6,670 or 18% (HESA, 2010) and those of ‘any white background’ was 30,205 or 82% (HESA, 2010).

Students were from a range of ages [see Table 16 (HESA, 2010)] with 571 or 58.6% ‘up to 29 years old’ and 403 or 41.4% equal to or ‘over 30-59 years old’. However the vast majority at 818 or 84% were ‘up to 39 years old’ with only 13 or 1.3% equal to or ‘over 50 years old’ (HESA, 2010). I surmise that nursing courses were very popular with students who were ‘18-39 years old’ at LSBU.

Five Common Characteristic Properties	BSc. Hons. Nursing Courses Students
Birth Gender:	
Male	n.115
Female	n.859
Prefer not to answer	0
Field of PRN Study:	
Adult	n.574
Mental Health	n.147
Child	n.253
Year of PRN Study:	
1st years	n.336
2nd years	n.328
3rd years	n.310
Ethnic Background:	
White: British	n.301
White: Irish	n.20
Any other white background	n.66
Black or Black British: Caribbean	n.88
Black or Black British: African	n.320
Any other Black background	n.11
Mixed Group: White & Black Caribbean	n.44
Mixed Group: White & Black African	n.34
Mixed Group: White Asian	n.4
Any other mixed background	n.42
Asian or Asian British: Indian	n.8
Asian or Asian British: Pakistani	0
Asian or Asian British: Bangladeshi	0
Any other Asian Background	n.8

Chinese:	n.4
Any other Chinese background	0
Other Background	n.10
Prefer not to answer	n.320
Current Age:	
18-21	n.326
22-29	n.245
30-39	n.247
40-49	n.143
50-59	n.13

Table 16 - five common characteristics BSc. (Hons.) nursing course population at LSBU (HESA, 2010)

The nursing student body at LSBU were not all eligible to be invited to participate in my research. I engaged in stratified sampling (Cohen, Manion and Morrison, 2017) because my population under study was students with dyslexia who held the shared characteristic categories of being full-time nursing students [see 1.3]. To be clear in my cross-sectional research design on who was and who was not eligible to participate, I drew up research study exclusion and inclusion criteria (Creswell, 2013).

3.4.1 My study exclusion criteria

Exclusion criterion apply to all 848 nursing students who did not have dyslexia at LSBU. By default this also excluded students with undiagnosed dyslexia (unknown to the student or as yet undiagnosed) along with students who self-report dyslexia but were untested and therefore undiagnosed.

3.4.2 My study inclusion criteria

To be invited to participate in my research the 974 nursing students had to have a positive dyslexia diagnosis and be on the DDS locally held register (LSBU, 2007/8). The eligible population that met this criteria were a minority group of 126 [see Table 17 (LSBU, 2007/8)] representing 12.93% of the local overall 974 student body. Table 17 shows the five common characteristic properties of my 126 population (LSBU, 2007/8) comparable to these demographics of the total 848 BSc. (Hons.) nursing students without dyslexia at LSBU (HESA, 2010).

Five Common Characteristic Properties	BSc. Hons. Nursing Course Students		
Birth Gender:	+Dyslexia 126	848	Totals 974
Male	21	94	115
Female	105	754	859
Prefer not to answer	0	0	0
Year of PRN Study:			
1st years	34	302	336
2nd years	47	281	328
3rd years	45	265	310
Field of PRN Study:			
Adult	70	504	574
Mental Health	18	129	147
Child	38	215	253
Ethnic Background:			
White: British	60	241	301
White: Irish	3	17	20
Any other white background	9	57	66
Black or Black British: Caribbean	8	80	88
Black or Black British: African	28	292	320
Any other Black background	1	10	11
Mixed Group: White & Black Caribbean	5	39	44
Mixed Group: White & Black African	4	30	34
Mixed Group: White Asian	0	4	4
Any other mixed background	5	37	42
Asian or Asian British: Indian	1	7	8
Asian or Asian British: Pakistani	0	0	0
Asian or Asian British: Bangladeshi	0	0	0
Any other Asian Background	1	7	8
Chinese:	0	4	4
Any other Chinese background	0	0	0
Other Background	1	9	10
Prefer not to answer		14	
Current Age:			
18-21	35	291	326
22-29	47	198	245
30-39	30	217	247
40-49	9	134	143
50-59	5	8	13

Table 17 - five common characteristics of target sample (LSBU, 2007/8)

3.4.3 Target sample and recruitment of my e-survey participants

As recommended by Roscoe (1975 cited in Sekaran and Bougie, 2016) I aimed to recruit a sample size larger than 30 participants to participate in my quantitative data collection. When writing my research proposal I planned my target sample for my e-survey completion at 30 - 40 participants (Knowles, 2009) but I actually had a total of 64 participants who completed my e-survey (Knowles, 2010a).

Issues with diversity meaning the age, gender and ethnic heritage of participants have been repeatedly highlighted, for example by Rao and Donaldson (2015) in understanding the broad make-up of sample-groups to assess how fair and inclusive research recruitment processes were (Equality and Human Rights Commission, 2011a). The special focuses of my doctoral degree course were 'sustainability, equality and diversity' (LSBU, 2017) and I wanted to utilise these inclusive approaches in order to have awareness of any unbalanced gap in my sample-group (Chamberlain, 2014 *cited in* Hefferon *et al.*, 2017).

I hoped to get a diverse voluntary sample of quantitative research participants (Palinkas *et al.*, 2015) and I wanted to know if my participants held a typical likeness of my population's five common characteristic categories of: age, gender, ethnic heritage and field along

with year of degree coursework [see 3.4.2; Table 17 (LSBU, 2007/8)], meaning I wondered if they were much the same as the target population, although it was a smaller number of people in my sample-group (Johnson and Christensen, 2014).

To assess this I requested ‘recorded value’ data within my participants’ survey responses on these five common characteristic discrete variables. Providing this was optional and my participants did not have to complete this part of my e-survey (Knowles, 2010a). Each question contained a “prefer not to answer” option and participants were urged to use this for any or all of the questions that they did not want to answer [see 3.3.1]. However, all 64 participants fully completed this part of my e-survey (Knowles, 2010a) and my raw data consisted of a total of 320 participant self-recorded values for me to process and summarise [see 4.1].

Cohen, Manion and Morrison (2017) highlight that diversity of sample participants was important to capture the full range of perspectives. To compare this I asked LSBU administrators for metrics, on the diverse properties of the population. I requested that these properties specifically include the same five common characteristics [see 3.4.2; Table 17 (LSBU, 2007/8)]. I used this information to compute whether the

properties were overrepresented, underrepresented or representative in those who actually volunteered to participate in my study compared to my target population [see 4.1].

Three representations of the characteristics of: gender, ethnic heritage and age [see 3.4.2; Table 17 (LSBU, 2007/8)] seen in my sample were also statistically measurable (Banerjee and Chaudhury, 2010) within the total UK BSc. (Hons.) nursing courses 36,875 population data (HESA, 2010). I believe that reporting on the common characteristic categories of my participants in my quantitative data was relevant [see 4.1]. This was because other nurse educationalists consider the generalisability of my research findings within their own professional nurse education contexts (CASP, 2014) [see 6.1]. It was also useful for fellow researchers comparing my data on sample-group diversity with their own study properties of common characteristics [see 8.2].

In terms of recruiting participants into my cross-sectional study (Creswell, 2013), I wanted to undertake this in a non-discriminative fashion thus championing equal opportunities (Great Britain. Equality Act, 2010). I invited all of the 126 population (LSBU, 2007/8) to be voluntary participants, meaning that each and every member of my target population had an equal chance of self-selecting (Roy, Acharya

and Roy, 2016). This ensured that my recruitment had no selective discrimination between the diverse demographics of this population through any researcher bias [see 6.1].

3.4.4 Sampling and recruitment of my interview participants

Qualitative methodology (Given, 2015) involves smaller participant numbers than quantitative methodology (Gray, 2013) as my participants did not need to be statistically representative (Abbott, 2016) of my 64 survey participant sample-group nor of my 126 population under study (Cohen, Manion and Morrison, 2017). As my 64 participants met homogeneous inclusion and exclusion criteria [see 3.4.2] I only needed a small qualitative sample of participants (Fletcher, 2017) to obtain relevant and diverse information on my phenomenon (NHS England, 2017). For small qualitative studies, six-to-ten interview participants were required (Fletcher, 2017) and a maximum sample size of 10 was recommended for phenomenology methodology research (Starks and Brown Trinidad, 2007). I believed that the precise interview sample size calculation depended on the key parameters of my quantification of the anticipated prevalence for the least prevalent theme desired to be seen in my data, adjusted by the likelihood that theme would be expressed by my participants; the desired likely number of instances of the theme being described and power that I wanted to find sufficient themes in my

qualitative data collection (Fletcher, 2017). With these considerations the desirable sample size for my qualitative data collection computed to equal eight participants [see Table 18] and I used this information in combination with the other sources of advice on my sample size (Fugard and Potts, 2015).

Prevalence	Appearance	Instances	Power
The expected population theme prevalence of the least prevalent theme, derived either from a <i>posteriori</i> knowledge or based on the prevalence of the rarest themes considered worth uncovering	How likely was it that if someone has something to say about a theme that they would actually say it	the number of desired instances of the theme	An adequately powered study would have a high likelihood of finding sufficient themes of the desired prevalence.
Prevalence 40%	Appearance 50% (0.5)	1x instance of a participant saying something was required	Power 80% sure of finding the least common theme
Prevalence 0.4	Adjusted prevalence 20% = 0.2	Instances 1.0	Power 0.8
Sample size formula (Fugard and Potts, 2015)			

Table 18 - qualitative sample size calculation

For my qualitative data collection my sampling frame was purposeful (Palinkas *et al.*, 2015) as I invited all 64 participants from my e-survey (Knowles, 2010a) to self-select as volunteers [see 3.3.1] for interview with me.

All prospective interview participants had been informed about this optional extra research study participation activity within the original Email I had sent to my target population when recruiting to my e-survey [see 3.3.2 and 3.4.3]. At end of my e-survey (Knowles, 2010a) completion and immediately after my participants clicked 'submit survey'

a message reminded them that they were all invited to Email me to arrange to meet with me for a one-to-one, face-to-face interview. As I was initially experiencing difficulties recruiting to my interviews I changed the reminder to contain a direct link for my participants to click onto which took them into a Microsoft® Office Outlook™ Email draft message on their LSBU student account with my Email address automatically populated and this proved useful (Jones *et al.*, 2008).

I desired quota sampling (Cohen, Manion and Morrison, 2017) from the self-selecting volunteers [see 3.3.1] from my quantitative sample-group on two common characteristic categories of: year of study and field of study [see 3.4.2; Table 17 (LSBU, 2007/8)]. I hoped to include the full range of practice placement exposure participants had experienced and to capture the complete range of adult, child and mental health opinion. These criteria meant for proportions of a minimum two and maximum three participants of each year and field. This equated to a sample-group numbering up to a maximum of nine participants. I started to recruit these volunteers [see 3.3.1] on a first-come-first-served basis and I planned to do this until two of each first, second and third year students were interviewed combined within two each of adult, child and mental health field students.

There were a total of nine survey sample-group participants who volunteered for my qualitative interviews (McBride and Cutting, 2015) but as the ninth person did not actually attend, the qualitative data collected in my research study comes from a total of eight interview participants. By chance they fulfilled my quota criteria so that I did not actually refuse anyone or need to engage with a recruitment drive via DDS for more participants.

3.5 Data collection using my research instruments

There was potential for respondent coercion because of my dual senior lecturer and researcher role. I wanted to ensure that my role as stage-four lecturer/practice educator (NMC, 2008) at LSBU did not impact limitations of data collection around a power dynamic of myself as interviewer and potentially personal students of mine as my research participants (Standing, 2009). This concern resolved itself whilst I was waiting for ethical approvals to start my data collection (Knowles, 2010d) [see 3.3]. I was successful in attaining a change of employment at a different university in the Home Counties. I was therefore a student-researcher but no-longer a nurse educationalist-employee of LSBU when my data collection took place.

My quantitative data was perception-based to collect my participants' views on the quality of the contextual environment of my phenomenon and the articulation, espoused, enacted and visible aspects of their psychosocial-cultural perspective of mentor support (Cohen, Manion and Morrison, 2017). My instrumentation for this was my e-survey (Knowles, 2010a) [see 3.2.1]. I used Chan's questions (2001) as this is the instrument that has been used most often to research student satisfaction with practice placements (Philips *et al.*, 2017).

3.5.1 E-survey

Once I had full ethical approval for my study from LSBU (Knowles, 2012) [see 3.3], a call for voluntary participants from my 126 target sample [see 3.4.3] was sent out by the DDS administrators. I wanted to find out from a cross-sectional sample of students perceptions about practice placements (Merleau-Ponty, *in Cobb translation by Edie* 1964). So I asked my target sample to self-select and volunteer as participants to self-record their own value responses to my e-survey (Knowles, 2010a). I did this to collect nominal quantitative research data from my convenience sample. In total five e-mail calls for participants, including reminders, were made by DDS staff on my behalf within 2012 and between 2015-2016.*

* I had an enforced interruption to my doctoral degree studies 2012-2014 due to ill health [see 7.0].

When I returned to my EdD research activities I sourced the research study article published by Salamonson *et al.* (2011) and I fully considered reducing my data collection to the abbreviated 19 questions. However, I made the decision not to re-commence it because I already had complete data for 84 questions (Chan, 2001) collected from 47 participants and I would have been repeatedly recruiting volunteer participants from the same 126 target sample [see 3.4]. These students had already been invited to participate four times, by the DDS administrators, and I perceived a risk that some of my participants might additionally complete the 19 question survey (Salamonson *et al.*, 2011). This would leave me with two sets of duplicate data from each of the same research participants.

To eliminate risk meant abandoning the 47 sets of participant data and re-commencing my data collection with the new 19 question version (Salamonson *et al.*, 2011). However, the prospect that these same students would all volunteer for a second time, or even if they did, to expect that a majority would complete 19 entirely repeated questions to the point of end of survey and click 'submit survey' I considered unlikely. Should the 47 be assumed not to undertake such a repetitive exercise then of my 126 target sample there were only a possible remaining 79 potential volunteers for me to participate. Because these people had

already been invited to take part in my 84 question survey four times, and were either non-volunteers or were non-completers, I deemed them an unlikely group to participate in the 19 question survey completion either. I was fearful that any change to my data collection strategy would end up with vastly fewer volunteer participants than the 47 I had already.

I therefore decided to adjust my research project design (FHEQ, 2008). I planned to tease out the same 19 questions of my data for a match to the 19 questions used by Salamonson *et al.* (2011) in their own research. It was these 19 question results that I analysed, [see 4.2] synthesised and presented in this thesis as descriptive theory [see 5.1].

I was fortunate after the fourth call and later following a fifth and final calls from DDS, to gain a further 17 participants who completed my 84 question (Chan, 2001) e-survey (Knowles, 2010a). With a total of 64 participants out of a possible 126, my data was statistically reliable to calculate the confidence level of the mean of the results for a mean estimation of my population (Kass, 2011) [see Table 19]. This was because the variance of the responses of my 64 participant's data represents a 50.8% survey completion rate with a confidence level of 95% and an interval or margin of allowable error of plus 5% to minus 5%

with a standard deviation of the variable of 10.17 (Hulley *et al.*, 2013, pp80).

Sample size calculations	
Confidence level (normal distribution) = 95%	Desired total width of confidence interval = $W = 5$
Standard deviation of the variable = $s = 10.7$ (12 was the standard error of the mean)	$W/S = 0.49$
Standard normal deviate for $\alpha = Z_{\alpha} = 1.96$	Sample size = $n = 4Z_{\alpha}^2 S^2 / W^2 = 64$

Table 19 - sample size for a descriptive study of a continuous variable

Statistical reliability came at a gold standard of 95% confidence level to provide forceful conclusions in indication of population value (Kass, 2011). This means that I was 95% confident that my sample accurately reflected the attitude of my population. This involved a minus 5% to plus 5% margin of error which determined the confidence interval for each of the 19 answers that my research sample of 64 participants had given (Banerjee and Chaudhury, 2010). This means that for some of the questions I have 99% confidence and for some 90% confidence that my sample gives a likely indication of the population values (Roy, Acharya and Roy, 2016) [see 4.2.2].

My qualitative data was experience-based to collect my participants' views on the quality of the contextual environment of my phenomenon and the more intangible aspects of their psychosocial-cultural experience of mentor support like assumptions, beliefs, problems,

values and wishes (Cohen, Manion and Morrison, 2017). My instrumentation for this was my ontological-interviews [see 3.2.2].

3.5.2 Interview

The “sufficiently complex [research instrument] to comprehend and learn about human existence is another human” (Lave and Kvale, 1995, p. 220). Through this lens I was the research instrumentation for my qualitative data collection and analysis. I ensured to prepare myself as at interview I believed that it was important for me to know the subject matter on my phenomenon to enable an informed conversation (Cohen, Manion and Morrison, 2017). Therefore I pre-prepared myself with comprehensive evidence-based *a priori* knowledge on the condition of dyslexia [see 2.1] and previous researcher’s work on my phenomenon [see 2.3]. I also pre-prepared myself with the practical phenomenological principles for the conduct of my interviews (Polit and Beck, 2012) [see 3.1.1 and 3.2.2] and embedded my plans for ethical self-conduct [see 3.3].

Phenomenologically I focused on illuminating the lived-experience of my participants within their psychosocial experience contextualised by my phenomenon (Langdridge and Hagger-Johnson, 2013). I planned to illuminate this by putting the spotlight on my participants. By this I mean

that my participant was in a searchlight held by me as interviewer on a sensitive subject of their psychological constructs of their dyslexia and how it manifests in their social-cultural experience in practice placements [see 2.1.8]. I was aware that my interview questions were an intrusion into my participant's private life of how they think and feel and what it means to be in the lived-world of my phenomenon of interest [see 3.3.3]. I planned a structured heterogeneous interview space with a repeated format for participants to disclose aspects of themselves in a friendly transaction and I did this in the following ways:-

I used semi-structured methods to keep my participant's discourse content on-track with my phenomenon of interest and for this I developed my interview *aide memoire* and I bought printed copies of this with me to interview to share and read together pre audio-recording as researcher-participant. I had developed my *aide memoire* from a combination of my quantitative e-survey (Knowles, 2010a) questions and pilot study [see 3.2.1 and 3.2.3]. I had made every effort to use understandable terminology to make each stage of my interview and areas for coverage on my phenomenon of interest clear to both myself as interviewer and my participant's as interviewee. My *aide memoire* range of questions were open-ended or expressions of desired areas to capture on my participant's unique way of their lived-in-world (Silverman,

2016). I hoped that my participants' advance access to my *aide memoire* would help them to understand my phenomenon of interest and what data was sought from them as participants. As they were informed that their responses to my questions would be probed [see 3.3.3] I believed that my *aide memoire* would help prevent my participants misunderstanding what I asked during my interview with them.

Participant engagement at interview with my *aide memoire* tool meant that I did not have to pitch questions for a passive or pressured response. Instead my participants could speak freely on the situations they wanted to raise on my phenomenon and take their time to describe these in their own way.

Reflexivity was an issue requiring heightened self-awareness, careful critical thinking and application (Jootun, McGhee and Marland, 2009). I elected to use my *aide memoire* to plan for my role at interview as one to help or enable my participants describe their experiences and inner truth about my phenomenon of interest without describing my own inner truth or experiences (Gadamer, 2004). I planned that the less I spoke on my phenomenon, by leaving out my own experience of it, then the more insightful data from my participants I would collect (Vessey, 2009).

I was aware that interviewer effects were a potent source of bias (Cohen, Manion and Morrison, 2017). This duality of potential effect was situated firstly between interviewee-researcher relation where there was a risk of reciprocity where my participant gave me answers that they thought I wanted to hear to please me because I was taking an interest in them (Mayo, 1945). My participants' world view of me as researcher was pivotal in this dynamic as they naturally form presumptuous expectations, opinions and attitudes of me that were visible, such as my age, gender, ethnic heritage and hidden such as my religion, sexual orientation, social class and status.

Secondly there was potential risk of tendency for me to see my participants in my own image as a nurse educationalist who has dyslexia and I too have been a student nurse on practice placements (1987-1990) and a NMC (2008) stage-two mentor (1991-2001). This might have led to misperceptions about my participants' descriptions of their experience. To illustrate this, there was a risk of me seeking answers that support my preconceived notions and *a posteriori* knowledge with rhetoric on how good it was to have dyslexia, as it was an attribute in clinical nursing practice and that mentors were proficient nurses (Benner, 2001) who hold the quality of practice placements as a learning environment high on their workplace agenda (NMC, 2008). An

expression of my self-identity from my past as a student and as a mentor (Levering, 2006) in the expression of present-day views by me could evoke an observer effect of positive reactivity (Mayo, 1945).

It was my duty as researcher to uncover and recognise my bias and acknowledge the possibility for an opposite polemic. By this I mean that I had to consider that dyslexia may not be an asset in clinical nursing practice, instead it may be a detriment and mentors may not engage with the standards of mentorship (NMC, 2008) and may not behave in ways that create an environmental atmosphere conducive to learning (Lewin, 1936). In this way I saw my reflexivity as a researcher as opening my mind to other possibilities that were outside my own *a posteriori* experience (Johnson and Christensen, 2014).

My interview stood as an interpersonal human interaction of researcher-participant relation for a view between myself as researcher and my participant as interviewee (Fitzpatrick, 2008). I wanted to neutralise my participants' opinion of my status to prevent it having any effect of authority (Mayo, 1945). I did this by dressing in my casual student attire and introducing myself as a student researcher studying for a doctoral degree in education. I chose to do this to prevent the risk of my participant interviewing me and my feeling passive, manipulated and

time adverse within my data collection agenda. It also reduced transference of my own attitudes, fears, feelings and needs from my lived-experience on my phenomenon (Mitchell and Greening, 2012). I deliberately did not introduce my own three key characteristics of my social status (nurse registrant and educationalist); my psychological status (having dyslexia) or my cultural status (student of equality, inclusivity and diversity). I planned that if my participant specifically asked then I would confirm the sought after psychosocial-cultural characteristic.

My interviews took place on a one-to-one basis and following informed consent when my participant said they were ready I audio-recorded our dialogue and their interview was digitally stored as verbal data. I believed that interviews between us was a relational and dynamic process with my participant as interviewee and myself as researcher (Gubrium *et al.*, 2012). As recommended by Cohen, Manion and Morrison (2017) this meant that I planned for a non-hierarchical relation with symmetry of power for dialogue between equals. In reality I found this contradictory and it was stressful for me handling these situations of me seeking descriptions of lived-experience without divulging my own beliefs, experiences, opinions, values and views on my phenomenon.

However I managed to willpower myself not to do this to myself to avoid any gross bias to my participants discourse.

I was seeking out hidden aspects (Wertz *et al.*, 2011) and taken-for-granted or concealed social and cultural practices (Streubert and Carpenter, 2011) which shape each participant's psychological lived-experience. This approach prompted my exploration of my participant's commonplace habits from their everyday experiences (Grbich, 2012). I was interested in their experience of socio-cultural interactions with their mentors (NMC, 2008) and other healthcare workers within the practice placement team. I was seeking out the students' own description of typical examples around my phenomenon of interest (Matua and Van Der Wal, 2015). I also captured information where my participants explained mentor behaviour (Lewin, 1936) and their experience of it and what it meant to them as a student with dyslexia and how this affected them as a student nurse in practice placements (Hartas, 2015).

I did not want my demeanour to be calculating, cold, detached by being perceived as one who mechanically or robotically collected data (Gubrium *et al.*, 2012). To this end I postured myself with good eye-contact as naturally interested in what my participant had to say (Edwards, 2010). I was alert to aspects of emotional context, meaning

that I was sensitive and empathetic to nuances of their behavioural and response (Bach and Grant, 2015). I wanted my participants to 'open-up' to me so I consciously made the situation as minimally threatening as possible (Arnold and Underman Boggs, 2015).

I ensured that each of my participants chose what day and time and where we met on campus and where we onward went for their interview itself for congenial surroundings. As a social situation, and following personal introductions, I asked them about their day thus far and journey to meet me and I told them about my own journey to avoid being seen as an authority and to put them at ease. I invited them to get a drink and food if they so wished and if they did then I did too. These small gestures were to try to establish informality and trust by securing cooperation from my participants and demonstrating my ability to get on with people making it a negotiated and shared social experience.

As advised by Edwards (2010) I was calm with a kindly facial expression and used appropriate compassionate gestures. I did this because I believe that as a community of nurses we best treat each other by behaving within our professional code of conduct toward each other (NMC, 2015a). Furthermore I think that the most effective communication with one another is when we expound our conduct within

the values of the 6Cs (Cummings and Bennett, 2012). With these constructs in mind I used active listening and consciously deployed patience to enable my participants to gather recollections and proceed with their description (Levering, 2006). I used silence with pauses to allow my participants to gather their thoughts and address their feelings (Bach and Grant, 2015). I used prompts to confirm and develop clarity and these were designed to avoid bias probing (Gubrium *et al.*, 2012). I phrased my questions such as: "...and please tell me more about how this made you feel"; "...please clarify your opinion on that" and "...could you please tell me what happened next". I occasionally gestured to places on my *aide memoire* to steer and help keep my participants on point with my phenomenon [see 3.2.2; Table 14]. This heterogeneous format was the same for all of my interview participants and I did this with a view to building the same rapport with uniformity of proceedings (Gubrium *et al.*, 2012).

I collected eight local ontologies on the experience of being a student nurse with dyslexia through my one-to-one in-depth audio recorded interviews held at the Southwark campus LSBU. As I wanted to construct some personal information about my interview participants to generate some basic profile data about them as a person [see 4.3] I used the same five key characteristic information [see 3.4.3] with

additional questions at interview that had gained ethical approvals [see 4.3].

Once transcription was completed my eight participants were invited to meet individually with me for further optional information collection through “member checks” as described by Bradbury-Jones *et al.* (2010, p. 25). My plan was to seek answers on how my conceptual themes compare with participants’ experiences and to find out what aspects of my participant’s experience were omitted (van Manen, 2016). This was to be an opportunity for my participants to correct and challenge any misinterpretations and to provide additional descriptions for rich information collection (Cohen, Manion and Morrison, 2017). I saw this as an opportunity for interactive learning for me (Dewey, 1938) through dialogical feedback and reflection on my findings as viewed by my participants (Braun and Clarke, 2013). However, all eight participants declined to undertake these proceedings, each citing course workload and or time constraints as their reason.

4.0 Primary data analyses:

The purpose of this chapter is to explain the steps I took to quantitatively analyse the data collected in my e-survey (Knowles, 2010a) this enabled me to summarise and describe my data in a meaningful way. I did my mathematical analysis with Excel Quick Analysis™ (Microsoft® Office™, 2013) and my statistical analysis with SPSS 20® (IBM®, 2016). I wanted to attain a detailed understanding of applicable techniques for statistical data analysis (FHEQ, 2008) as I wanted to make inferences about my underlying population from which my data was recorded (Kass, 2011).

I presented my participants demographic survey raw data [see 4.1; Table 21 (Knowles, 2016)], which included the same five common characteristics [see 3.4.2; Table 17 (LSBU, 2007/8)], as percentages representing proportions [see 4.1]. Then I presented my descriptive analysis of individual participant data from my e-survey (Knowles, 2010a) [see 4.2.1]. I analysed the sample-group quotas with Excel Quick Analysis™ (Microsoft® Office™, 2013) and placed these in bar charts [see 4.2.2; Fig. 2]. Then I undertook SPSS 20® (IBM®, 2016) statistical analysis on the resultant data to measure the central tendencies [see 4.2.2; Fig. 3], measures of dispersion, standard deviations, variance and standard of errors (Abbott, 2016).

To interpret my data I used the ANOVA one sample T-Test with a 95% confidence level (Roy, Acharya and Roy, 2016) [see 4.2.2; Fig. 4]. Then I used my sample data to infer statistical estimations and predictions or generalisations about my population (Kass, 2011) [see 4.2]. As the standardised e-survey was norm-referenced I was able to compare individuals' scores with the norm in my sample (or norming group). I did this with the eight interview participants to identify interesting data to report on [see 4.2.3].

For my qualitative data analysis I set up a process by means of which I was able to use interpretative phenomenological processes to uncover the prevailing viewpoints of my participants (Thorne, 2016). This chapter's purpose is to examine the dual method of emic and etic interview analysis that I used (Silverman, 2015), and importantly, I will demonstrate the depth of my analysis (Robinson, 2014). I selected to use both forms of analysis as they were equally deemed valuable in my study of social behaviour (Patton, 2014).

I began with an emic analysis (Silverman, 2015) as an “open focus” (Cohen, Manion and Morrison, 2017, p. 150) examining my phenomenon of lived-experience and being (Makkreel and Rodi, 2010) through the eyes of my participants. These analytics derived a

conceptual framework of themes that I found and noted down in my ‘*concept book*’ (Brenner, Brown and Canter, 1985). These were that students with dyslexia experienced particular issues with the practicum of; handover, acquiring new skills and documentation [see 5.2.4].

However, as meaning is usually hidden or veiled (van Manen, 2016), I also used a process of etic analysis (Silverman, 2015). I was seeking my participants’ psychosocial relationships for learning (Dewey, 1938) in practice placements with the focus of my professional doctoral degree (LSBU, 2017). My theoretically inspired reasoning was initiated in my ‘*concept book*’ (Brenner, Brown and Canter, 1985). Here I had planned for the exploration of my participants’ experiences by enlisting abstract concepts on issues of inclusivity in practice placements involving diversity, equality and reasonable adjustments for learning to take place (Great Britain. Equality Act, 2010). I examined whether or not these themes were evident in my participants’ accounts [see Table 20].

Judie’s conceptual thinking tool...
What refined and informative first-person experiences on <u>equitable and inequitable practices</u> were described (<i>focus on my participants own lived words and their own meanings... followed by my own third-person conceptual interpretations</i>)
What refined and informative first-person experiences on <u>mentoring that met and did not meet diverse needs</u> were described (<i>focus on my participants own lived words and their own meanings... followed by my own third-person conceptual interpretations</i>)
What refined and informative first-person experiences on <u>inclusive and exclusive mentoring practices</u> were described (<i>focus on my participants own lived words and their own meanings... followed by my own third-person conceptual interpretations</i>)
What refined and informative first-person experiences on <u>reasonable adjustments usage</u> were described (<i>focus on my participants own lived words and their own meanings... followed by my own third-person conceptual interpretations</i>)
What <u>preferred learning climates</u> were described (<i>focus on my participants own lived words and their own meanings... followed by my own third-person conceptual interpretations</i>)
How did my participants describe the actual practice placement learning environment (<i>linguistics – how did my participants use language to communicate and express their psycho-social-cultural experience to me</i>)

Table 20 - ‘concept-book’ for my interpretative phenomenological analysis of diversity, equality, inclusivity and reasonable adjustments

4.1 E-survey: Mathematical analysis of my 64 participants' common characteristic data

The first of the five common characteristics for mathematical analysis in my sample was gender. There were seven or 11% of male participants and 57 or 89% of female participants [see Table 21 (Knowles, 2016)] from the potential 21 males and 105 females in my target population of 126 students [see 3.4.2; Table 17 (LSBU, 2007/8)]. My seven male participants (Knowles, 2016) represented just 33% of the 21 males in my target population (LSBU, 2007/8) and the 57 female participants (Knowles, 2016) represented 54% of the 105 females in my target population (LSBU, 2007/8). The gender of my voluntary sample of e-survey (Knowles, 2010a) participants was not equally representative of my target population gender quotients and it is not known to me why my study appealed more to female rather than male recruiters.

The second of the five common characteristics for calculation was the participants' year of study within the three-year nursing course. There were 20 first; 27 second and 17 third years [see Table 21 (Knowles, 2016)] which proportionally formed 31% first; 42% second and 27% third years taking part within my 64 participants (Knowles, 2016). Out of 34 first years within my target population of 126 students [see 3.4.2; Table 17 (LSBU, 2007/8)] there were 59% who participated (Knowles, 2016). There were 27 or 57% second years who took part (Knowles, 2016) out

of 47 second years in my target population of 126 students [see 3.4.2; Table 17 (LSBU, 2007/8)]. There were 17 or 38% third years who participated (Knowles, 2016) out of 45 third years from within my target population of 126 students [see 3.4.2; Table 17 (LSBU, 2007/8)].

Third year nursing students are knowingly time-oppressed on their level 6 coursework (Qualifications and Credit Framework, 2012) and probably did not have the capacity to engage with the time commitments of being my research participant [see 3.1.1]. This explanation may account for the particular poor volunteering in my target population of 45 students (LSBU, 2007/8). It was possible that third year participants started to complete my 84 question survey (Chan, 2001) and found it problematic in that they did not have the time to progress through it as far as actually reaching the point of the end of survey and clicking 'submit survey' [see 3.3.3].

Within my target population there were 34 or 10.11% students with dyslexia in the first year of their studies, 47 or 14.32% in their second year and 45 or 14.51% in their third and final year [see 3.4.2; Table 17 (LSBU, 2007/8)]. The proportional and progressive increase was likely because stage-four lecturer/practice educators (NMC, 2008) within LSBU gradually recognised that their students experienced difficulties.

These students were referred to the local DDS team for diagnostic screening appointment, and this lead to a diagnostic testing appointment [see 2.7.1]. By the time diagnosis was achieved, and the students positive dyslexia report was represented in the informatics, they had likely progressed to their second or third year of studies.

The third common characteristic examined was the field of the nursing course that the research sample were studying. I had recruited 38 or 54.28% from adult, 9 or 50% from mental health and 17 or 44.73% from child fields [see Table 21 (Knowles, 2016) and 3.4.2; Table 17 (LSBU, 2007/8)]. Each of the fields of study were therefore proportionally represented through the volunteers to my study.

The penultimate of the five common characteristics was ethnic background. My study was made up of a range of ethnic background as there were 31 or 48.43% participants from White British/Irish and any other white background sourced from the 72 or 57.14% population [see Table 21 (Knowles, 2016) and 3.4.2; Table 17 (LSBU, 2007/8)]. There was a strong representation from other backgrounds with 33 or 51.56% participants from 51 or 40.47% population and it is positive that my study offered an opportunity for those who are from doubly marginalized UK

groupings of ethnicity with a disability found a platform to voice their experience.

The final common characteristic I measured was the age of my study participants and this ranged from 18 to 59 years. In a review that analysed the age of female participants those aged <35 years were under-represented in UK surveys (Howcutt *et al.*, 2017) and my own e-survey (Knowles, 2010a) was no exception. Those who were most likely to participate in my study were age 30+ which is unsurprising as 37 or 57.81% of these mature students were diagnosed with dyslexia age 30+ and their heightened interest in participating was somewhat predictable as 40 or 62.5% were diagnosed at LSBU since beginning their BSc. (Hons.) nursing course.

In terms of self-identity 51 or 79.68% of my participants characterised themselves as disabled (Holland and Lachicotte, *in* Daniels, Cole and Wertsch, 2007). As a marginalized group they have experienced discrimination [see 5.2] and viewing themselves as disabled may impact further on how my phenomenon was experienced.

Demographic Raw Data-Sets	Research Sample - Quantitative Survey [<i>n</i> =64]
Birth gender:	
Male	7
Female	57
Year of BSc. (Hons) study:	
1st years	20
2nd years	27
3rd years	17
Field of pre-registration nursing studies:	
Adult	38
Mental Health	9
Child	17
Ethnic background:	
White: British	27
White: Irish	1
Any other white background	3
Black or black British: Caribbean	5
Black or black British: African	19
Mixed group: White and black Caribbean	3
Mixed group: White and black African	3
Any other mixed background	2
Asian or Asian British: Indian	1
Current age:	
18-21 years old	11
22-29 years old	12
30-39 years old	25
40-49 years old	14
50-59 years old	2
Age of dyslexia diagnosis	
Under 21	19
22-29 years old	8
30-39 years old	24
40-49 years old	12
50+ years old	1
Diagnosis timing:	
Before starting BSc. (Hons) nursing course	24
After starting BSc (Hons) nursing course	40
Disability (how the research sample characterise themselves)	
Yes - disabled	51
No – not disabled	13

Table 21 - demographics of *n*=64 qualitative survey (Knowles, 2016)

4.2 E-survey: My analysis using descriptive statistics and statistical inferences

I retrieved the data of my abbreviated 19 question (Salamonson *et al.*, 2011) e- survey from Google® docs™ (Knowles, 2010a) and this was automated onto a Excel™ spreadsheet (Microsoft® Office™, 2013). In total 19 individual judgements were made by each of my 64 research participants (*n*=64). Every question was allotted an answer by every participant meaning that my research information was drawn from 100% complete data with no omissions [see Table 22]. My quantitative data

consisted of 19 complete raw data-sets formed from a total of 1,216 participant self-recorded values for me to process and summarise.

Included		Excluded		Total	
<i>n</i>	Percent	<i>n</i>	Percent	<i>n</i>	Percent
64	100%	0	0.0%	64	100%

Table 22 - 100% quantitative response data included in analysis of results

4.2.1 Analysing my 64 participant individual perceptions

To illustrate my participants' raw data particulars I extracted an example of the first 10 of these from my Excel™ spreadsheet (Microsoft® Office™, 2013) [see Table 23]. The particulars shown were data on seven of the first 19 answers to my e-survey (Knowles, 2010a) and these exist as concrete individual entities (Smith and Ceusters, 2010) that capture a frozen moment in time (Cohen, Manion and Morrison, 2017). For replicability of my research I have included the original 1 - 42 numbered questions from Chan's survey (Chan, 2001) within brackets against the numbered 1 - 19 questions (Salamonson *et al.*, 2011). For example Salamonson *et al.*, (2011) question number seven was Chan (2001) question number 15 [see Table 23]. I have done this for other researchers to readily compare their results with mine [see 6.1].

Participant # (n = 64)	Timestamp	Q #1 (1) My mentor usually considered my feelings	Q #2 (2) My mentor talked at me rather than listened to me	Q #3 (3) I looked forward to going to my shifts on practice placement	Q #4 (7) My mentor talked to me like an individual	Q #5 (9) I was dissatisfied with what was done on practice placement	Q #6 (13) My mentor tried hard to help me	Q #7 (15) At the end of my shift on practice placement I had a sense of job satisfaction
1	06/01/12	Disagree	Disagree	Strongly Agree	Agree	Strongly Agree	Agree	Strongly Agree
2	06/01/12	Disagree	Disagree	Agree	Strongly Agree	Agree	Strongly Disagree	Agree
3	06/01/12	Agree	Disagree	Disagree	Strongly Disagree	Agree	Strongly Disagree	Agree
4	07/01/12	Disagree	Agree	Strongly Disagree	Disagree	Disagree	Disagree	Strongly Agree
5	07/01/12	Disagree	Agree	Agree	Strongly Disagree	Agree	Agree	Strongly Disagree
6	08/01/12	Strongly Disagree	Agree	Strongly Disagree	Disagree	Strongly Agree	Disagree	Disagree
7	08/01/12	Strongly Disagree	Agree	Strongly Disagree	Disagree	Strongly Agree	Strongly Disagree	Disagree
8	08/01/12	Agree	Agree	Strongly Agree	Disagree	Disagree	Disagree	Strongly Disagree
9	09/01/12	Disagree	Agree	Agree	Agree	Strongly Agree	Disagree	Agree
10	09/01/12	Strongly Agree	Strongly Disagree	Strongly Disagree	Strongly Disagree	Agree	Disagree	Strongly Disagree

Table 23 - example of 10 participant answers to seven of the questions

I processed my raw data into my Excel™ spreadsheet (Microsoft® Office™, 2013) to reduce the particulars [see Table 23] into numerical data that I could count (Smith and Ceusters, 2010). Meaning that my quantitative descriptive analysis was reductionist (Abbott, 2016). To do this data conversion I applied a Likert-scale largest-to-smallest (Likert, 1932) to a selection of my data-sets (Knowles, 2010a) [see Table 24].

CLEI® Likert-Scale (1932)	
Chan (2003) Q# 1, 3, 7, 13, 15, 17, 19, 33, 35, 39	
Salamonson <i>et al.</i> (2011) Q# 1, 3, 4, 6, 7, 9, 10, 15, 16 & 19	
Response:	Likert Scale Scores
Strongly Agree	5
Agree	4
Omitted	3
Disagree	2
Strongly Disagree	1

Table 24 - Likert-scale (1932) for questions 1,3,4,6,7,9,10,15,16&19

Chan (2003) also designed a selection of his 42 questions to attract a reverse Likert-scale smallest-to-largest (Trochim, Donnelly and Arora, 2016). Meaning that for some of my 19 data-sets (Knowles, 2010a) I applied Chan's (2003) reverse Likert-scale scores (Likert, 1932) [see Table 25].

CLEI® Reverse Likert-Scale (1932) Chan (2003) Q# 2, 9, 16, 21, 25, 27, 31, 37, 38 Salamonson <i>et al.</i> (2011) Q# 2, 5, 8, 11, 12, 13, 14, 17 & 18	
Response:	Reverse Likert Scale Scores
Strongly Agree	1
Agree	2
Omitted	3
Disagree	4
Strongly Disagree	5

Table 25 - reverse Likert-scale (1932) for questions 2,5,8,11,12,13,14,17&18

I used the same raw data-set selection [see Table 23] of my questions 1 - 7 (Knowles, 2010a) to provide an example of the completed numerical data in my Excel™ spreadsheet (Microsoft® Office™, 2013). Within this each instance data value (x) was provided [see Table 26]. I colour-coded my spreadsheet in yellow for Likert-scale and green for reverse Likert-scale (Likert, 1932 and Chan, 2003). I did this to track and check my data processing in my Excel™ spreadsheet (Microsoft® Office™, 2013). The full $n=64$ participant individual results are presented in chapter 5 [see 5.1.1; Tables 32 and 33].

Participant # (n = 64)	Timestamp	Q #1 (1) My mentor usually considered my feelings	Q #2 (2) My mentor talked at me rather than listened to me	Q #3 (3) I looked forward to going to my shifts on practice placement	Q #4 (7) My mentor talked to me like an individual	Q #5 (9) I was dissatisfied with what was done on practice placement	Q #6 (13) My mentor tried hard to help me	Q #7 (15) At the end of my shift on practice placement I had a sense of job satisfaction
1	06/01/12	x = 2	x = 4	x = 5	x = 4	x = 1	x = 4	x = 5
2	06/01/12	x = 2	x = 4	x = 4	x = 5	x = 2	x = 1	x = 4
3	06/01/12	x = 4	x = 4	x = 2	x = 1	x = 2	x = 1	x = 4
4	07/01/12	x = 2	x = 2	x = 1	x = 2	x = 4	x = 2	x = 5
5	07/01/12	x = 2	x = 2	x = 4	x = 1	x = 2	x = 4	x = 1
6	08/01/12	x = 1	x = 2	x = 1	x = 2	x = 1	x = 2	x = 2
7	08/01/12	x = 1	x = 2	x = 1	x = 2	x = 1	x = 1	x = 2
8	08/01/12	x = 4	x = 2	x = 5	x = 2	x = 4	x = 2	x = 1
9	09/01/12	x = 2	x = 2	x = 4	x = 4	x = 1	x = 2	x = 4
10	09/01/12	x = 5	x = 5	x = 1	x = 1	x = 2	x = 2	x = 1

Table 26 - example of 10 answers to seven questions with applied Likert-scores (yellow) and reverse Likert-scores (green)

4.2.2 Analysing my quantitative sample-groups perceptions

To develop my descriptive theory (Abbott, 2016) [see 5.1] I had to

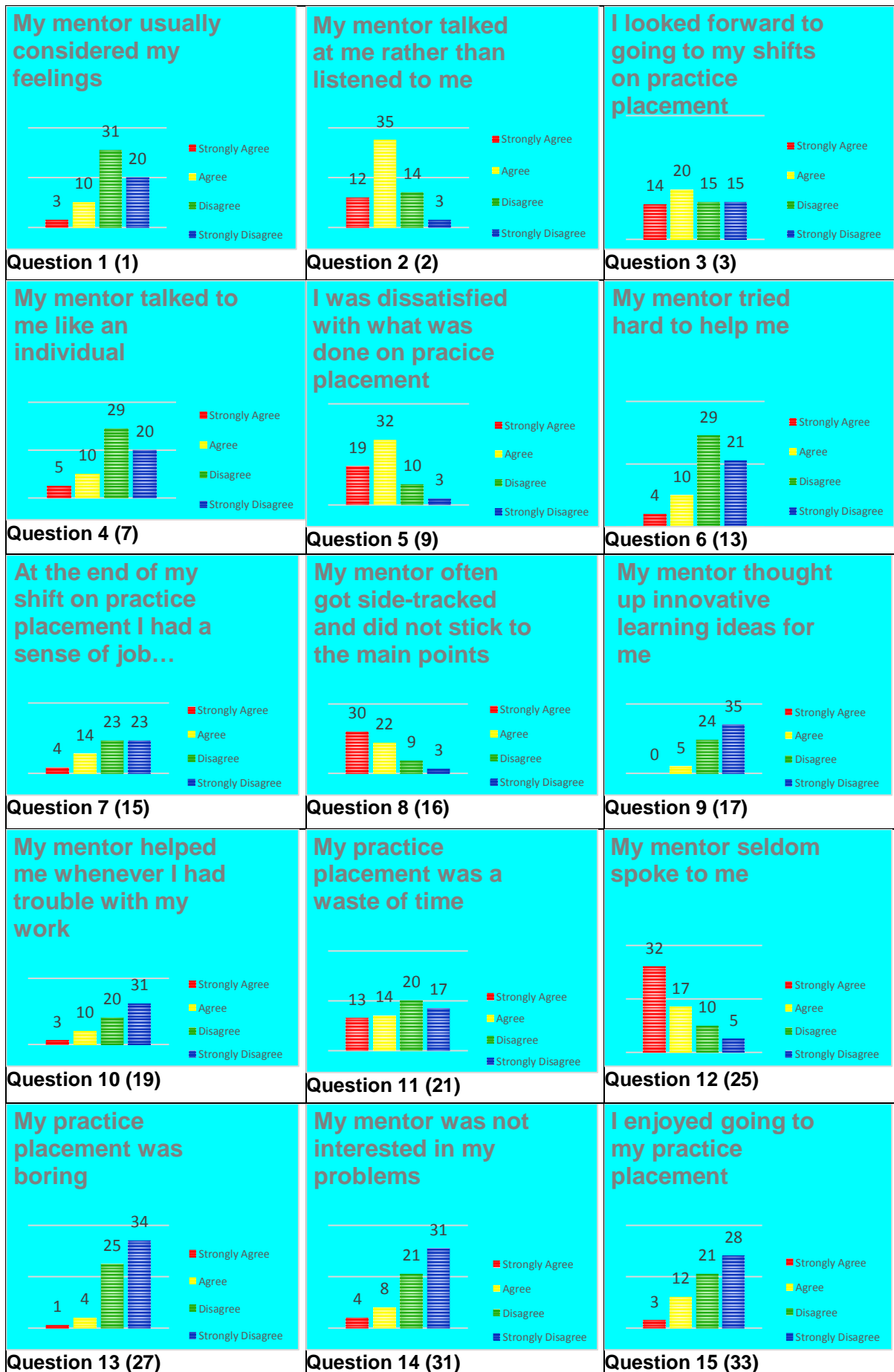
integrate the data within each of my 19 data-sets and then compute my statistical analysis (Banerjee and Chaudhury, 2010). I grouped the numeri's on each of the $n=64$ particular instances (x) [see Table 26] on the basis of the multi-similarity relations between Chans (2001) survey answers for strongly agree; agree; disagree or strongly disagree [see 4.2.1; Table 23] and these form the types or universals (Abbott, 2016).

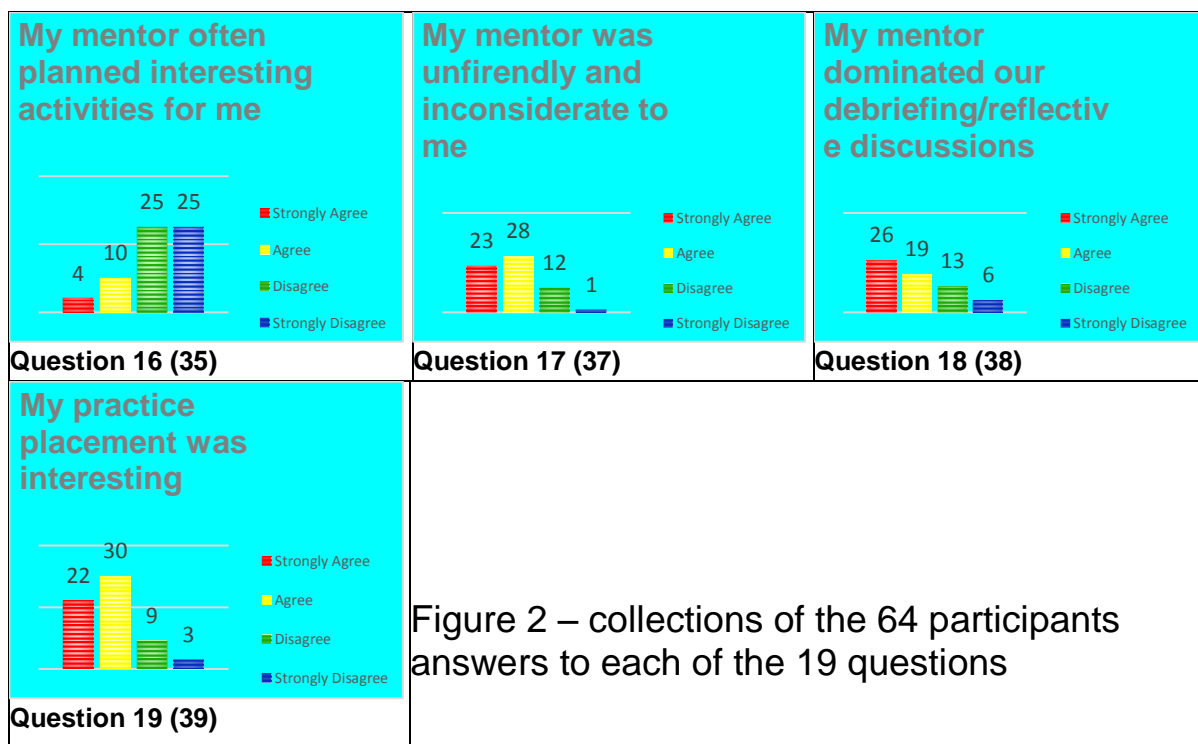
Then I calculated the frequencies of my participants' answers to generate like entities (Smith and Ceusters, 2010). To do this I added up the number of times that the particulars occur in each of the types or universals for all of the 19 data-sets [see 4.2.1; Table 23]. Using Excel Quick Analysis™ (Microsoft® Office™, 2013) I was then able to form the

collections of the types or universals of each data-set into bar charts. I did this for all 19 of my e-survey questions (Knowles, 2010a) [see Fig. 2].

By undertaking this data integration (Abbott, 2016) my research data exist in space and time and exist only once (Smith and Ceusters, 2010). I make the general assertions that I believe that they describe reality and were repeatable features of reality (Kass, 2011) [see 8.2]. I presented my analysed data in bar charts with the corresponding numbered frequencies of the types or universals to show their comparison. My bar charts enabled me to visualise the collective answer to each question by comparing the height of the charted block columns [see Fig. 2] and from these I made inferences on the nature of the students' perception of practice placements (Merleau-Ponty, *in Cobb translation by Edie* 1964) [see 5.1].

The reason I included Chan's (2001) original question number, as shown in brackets on my bar charts, was to allow other researchers to recreate these and verify or falsify my research results (Smith and Ceusters, 2010) [see 6.1].





I used inferential statistics to estimate the extent of error (Abbott, 2016), to express near certainty, I quantified the probability of error to make inferences or generalisations (Kass, 2011). I did this because I was interested in the properties of the definite $N=126$ population from which I took the $n=64$ sample (Banerjee and Chaudhury, 2010). I could assume that my data was generated by an underlying probability distribution (De Moivre, 1711 *translation by* McClintock, 1984). However I wanted to test whether my data itself formed a probability distribution (Abbott, 2016). I undertook various measurements of variables and I did this because I wanted to know how far I could statistically generalise from my sample [see 4.1; Table 21 (Knowles, 2016)] to my population under study [see 3.4.2; Table 17 (LSBU, 2007/8)]. Meaning that I made inferences about

the $N=126$ population parameters with estimates computed from my one-sample statistics (Roy, Acharya and Roy, 2016). To process these calculations I transferred the data from my Excel™ spreadsheet (Microsoft® Office™, 2013) into SPSS 20® (IBM®, 2016) for descriptive statistical analysis.

The totals were counted by adding up the response scores in each datum set and as 64×5 was 320 then this was the maximum Likert-score attainable (Likert, 1932) [see 4.2.1; Table 24 and Table 25] and I made inferences on student perceptions (Merleau-Ponty, *in Cobb translation by Edie* 1964) [see 5.1]. The proportions or frequencies in my $N=126$ population [see 3.4.2; Table 17 (LSBU, 2007/8)] were probably not the same, but not far off as my $n=64$ sample (De Moivre, 1711 *translation by McClintock*, 1984). So I inputted frequencies (f) of the four types or universals (Smith and Ceusters, 2010) into SPSS 20® (IBM®, 2016) from each of my 19 bar charts [see Fig. 3]. The total of the frequencies answered in each data-set equals the sample $n=64$. Frequencies numerically showed the pattern of classification distribution from the Likert scale (Likert, 1932) and my participant responses as quantity variables [see Fig. 3]. Then I calculated the relative frequency to give the percentages of frequency. I did this for each of the four types or universals (Smith and Ceusters, 2010) with the calculation $f \div n$ [see Fig

3] for all 19 of my data-sets and the significance of these were examined [see 5.1].

I was interested in the measures of central tendency (Abbott, 2016) within my processed data as this enabled further descriptive statistical calculations for inferences to my population (Banerjee and Chaudhury, 2010) [see 5.1]. I plotted the central tendency mode average [see Fig. 3], this being the most frequently answered type or universal (Smith and Ceusters, 2010) within in each of my bar charts [see Fig. 2]. Then I used SPSS 20® (IBM®, 2016) to compute the sample mean for each of my 19 data-sets this being all of the Likert-scale (Likert, 1932) scores added together and divided by 64 to give me the statistical sample mean and this was shown as \bar{x} [see Fig. 3]. I used this to estimate or inference the parameter figures that describe my sample population mean (μ) where $\bar{x} = \mu$ [see 5.1].

My mentor usually considers my feelings	Descriptive Statistics			My mentor talked at me rather than listened to me	Descriptive Statistics		
	Likert Score	Frequency (f)	Percent		Likert Score	Frequency (f)	Percent
Strongly Agree	5	f = 3	4.6	Strongly Agree	1	f = 12	18.7
Agree	4	f = 10	15.6	Agree	2	f = 35	54.6
Disagree	2	f = 31	48.4	Disagree	4	f = 14	21.8
Strongly Disagree	1	f = 20	31.2	Strongly Disagree	5	f = 3	4.6
Totals = 137/320		n = 64	100	Totals = 153/320		n = 64	100
Question 1 (1)				Question 2 (2)			

I looked forward to going to my shifts on practice placement	Descriptive Statistics			My mentor talked to me like an individual	Descriptive Statistics		
	Likert Score	Frequency (f)	Percent		Likert Score	Frequency (f)	Percent
Strongly Agree	5	f = 14	21.8	Strongly Agree	5	f = 5	7.8
Agree	4	f = 20	31.2	Agree	4	f = 10	15.6
Disagree	2	f = 15	23.4	Disagree	2	f = 29	45.3
Strongly Disagree	1	f = 15	23.4	Strongly Disagree	1	f = 20	31.2
Totals = 195/320		n = 64	100	Totals = 143/320		n = 64	100
Question 3 (3)				Question 4 (7)			
I was dissatisfied with what was done on practice placement	Descriptive Statistics			My mentor tried hard to help me	Descriptive Statistics		
	Likert Score	Frequency (f)	Percent		Likert Score	Frequency (f)	Percent
Strongly Agree	1	f = 19	29.6	Strongly Agree	5	f = 4	6.25
Agree	2	f = 32	50	Agree	4	f = 10	15.6
Disagree	4	f = 10	15.6	Disagree	2	f = 29	45.3
Strongly Disagree	5	f = 3	4.6	Strongly Disagree	1	f = 21	32.8
Totals = 135/320		n = 64	100	Totals = 139/320		n = 64	100
Question 5 (9)				Question 6 (13)			
At the end of my shift on practice placement I had a sense of job satisfaction	Descriptive Statistics			My mentor often got side-tracked and did not stick to the main points	Descriptive Statistics		
	Likert Score	Frequency (f)	Percent		Likert Score	Frequency (f)	Percent
Strongly Agree	5	f = 4	6.25	Strongly Agree	1	f = 30	46.9
Agree	4	f = 14	21.8	Agree	2	f = 22	34.4
Disagree	2	f = 23	35.9	Disagree	4	f = 9	14.1
Strongly Disagree	1	f = 23	35.9	Strongly Disagree	5	f = 3	4.6
Totals = 145/320		n = 64	100	Totals = 125/320		n = 64	100
Question 7 (15)				Question 8 (16)			
My mentor thought up innovative ideas for me	Descriptive Statistics			My mentor helped me whenever I had trouble with my work	Descriptive Statistics		
	Likert Score	Frequency (f)	Percent		Likert Score	Frequency (f)	Percent
Strongly Agree	5	f = 0	0	Strongly Agree	5	f = 3	4.6
Agree	4	f = 5	7.8	Agree	4	f = 10	15.6
Disagree	2	f = 24	37.5	Disagree	2	f = 20	31.2
Strongly Disagree	1	f = 35	54.6	Strongly Disagree	1	f = 31	48.4
Totals = 103/320		n = 64	100	Totals = 126/320		n = 64	100
Question 9 (17)				Question 10 (19)			

My practice placement was a waste of time	Descriptive Statistics			My mentor seldom spoke to me	Descriptive Statistics		
	Likert Score	Frequency (f)	Percent		Likert Score	Frequency (f)	Percent
	1	f = 13	20.3		1	f = 32	50
	2	f = 14	21.8		2	f = 17	26.5
	4	f = 20	31.2		4	f = 10	15.6
	5	f = 17	26.5		5	f = 5	7.8
Totals = 206/320				Totals = 131/320			
n = 64				n = 64			
Question 11 (21)				Question 12 (25)			
My practice placement was boring	Descriptive Statistics			My mentor was not interested in my problems	Descriptive Statistics		
	Likert Score	Frequency (f)	Percent		Likert Score	Frequency (f)	Percent
	1	f = 1	1.56		1	f = 4	6.25
	2	f = 4	6.25		2	f = 8	12.5
	4	f = 25	39		4	f = 21	32.8
	5	f = 34	53.1		5	f = 31	48.4
Totals = 279/320				Totals = 259/320			
n = 64				n = 64			
Question 13 (27)				Question 14 (31)			
I enjoyed going to my practice placement	Descriptive Statistics			My mentor often planned interesting activities for me	Descriptive Statistics		
	Likert Score	Frequency (f)	Percent		Likert Score	Frequency (f)	Percent
	5	f = 3	4.6		5	f = 4	6.25
	4	f = 12	18.7		4	f = 10	15.6
	2	f = 21	32.8		2	f = 25	39
	1	f = 28	43.7		1	f = 25	39
Totals = 133/320				Totals = 135/320			
n = 64				n = 64			
Question 15 (33)				Question 16 (35)			
My mentor was unfriendly and inconsiderate to me	Descriptive Statistics			My mentor dominated our debriefing/reflective discussions	Descriptive Statistics		
	Likert Score	Frequency (f)	Percent		Likert Score	Frequency (f)	Percent
	1	f = 23	35.9		1	f = 26	40.6
	2	f = 28	43.7		2	f = 19	29.6
	4	f = 12	18.7		4	f = 13	20.3
	5	f = 1	1.56		5	f = 6	9.3
Totals = 132/320				Totals = 146/320			
n = 64				n = 64			
Question 17 (37)				Question 18 (38)			

My practice placement was interesting	Descriptive Statistics			Mode and Mean Averages (\bar{x})
	Likert Score	Frequency (f)	Percent	
Strongly Agree	5	f = 22	34.4	Mode 4 \bar{x} = 3.9
Agree	4	f = 30	46.9	
Disagree	2	f = 9	14.1	
Strongly Disagree	1	f = 3	4.7	
Totals = 251/320		n = 64	100	
Question 19 (39)				

Figure 3 - collection totals, frequency and percentage mode and mean central tendency

I was interested in the variability that exists within my sample data (Banerjee and Chaudhury, 2010). For this I computed the distribution or measures of dispersion (Abbott, 2016) meaning the range and standard deviation along with the variance (De Moivre, 1711 *translation by* McClintock, 1984).

In my data the range was 1 - 5 with the Likert-scale score (Likert, 1932) of three not used. This was because Chan (2003) had reserved this for research data analysts to score three in the event of an omitted question [see 4.2.1; Tables 24 and 25] essentially Chan's survey tool (Chan, 2001) is therefore a 4-point scale range of participants optional answers of strongly agree/agree and disagree and strongly disagree. Scales with a mid-point may hold a central-tendency bias toward participants answering the survey questions down the middle thus avoiding the agree/disagree response categories (Mansutti *et al.*, 2017). This risk was avoided as scores of three did not feature in my research

data because I set my e-survey design controls within the electronic medium Google® docs™ (Knowles, 2010a) without any possibility of omission on an answer by participants. My participants responded to each question by choosing their answer and clicking on one corresponding radio button. My next survey question was not available for participants to answer until the preceding question had been allotted an answer. I did this to ensure that responses were provided to all of my questions [see 4.2; Table 22]. In total 19 individual Likert-scale (Likert, 1932) scores ranging from 1 - 5 represent each of my research participant's answers. This means that each surveys total score range equates as 19-to-95 or minus 47.5 to plus 47.5 (Salamonson *et al.*, 2011).

As the standard deviation for my population (σ) was not known I measured standard deviation in my $n=64$ sample (s) to infer the standard deviation within my population ($N=126$). I did this to see how spread out my scores (x) were from within my range of 1 - 5 (Likert, 1932) [see 4.2.1; Table 26]. The range of difference (the central figure between the maximum and minimum classification) were measures of dispersion. To calculate this I used a defining formula in SPSS 20® (IBM®, 2016) with my sample mean (\bar{x}) as my measure of central tendency as $\bar{x}=0$ [see Fig. 3]. With each number (x) the mean (\bar{x}) was subtracted and the sum

(Σ) was squared (2). The result was divided by the total number of the data-set ($n=64$) minus one ($n - 1$) and then the mean of these was calculated as the square root ($\sqrt{}$). Therefore the formula used for this calculation was $s = \sqrt{\frac{\Sigma(x - \bar{x})^2}{n - 1}}$. My standard deviations were shown as the square root of the average of the squares of differences between each of the numbers and the mean of the numbers [see Fig. 4]. The probability of my sample mean was zero or $\bar{x} = 0$ plus or minus one standard deviation (s) where this equals plus or minus one $s=\pm 1$ (Hulley *et al.*, 2013).

I used my definite population ($N=126$) to make parametric inferences about my population mean (μ) (Abbott, 2016) and I did this using my one-sample statistics mean (\bar{x}) ($n=64$). I wanted to indicate the precision of that value in the form of a standard of error (SE). I used bootstrap (b) to estimate the uncertainty of my statistics. To do this I used SPSS 20® (IBM®, 2016) to input my sample size of $n=64$ with my bootstrap size of $b=126$. For each of the 19 data-sets I used this bootstrap (b) to generate the values for the estimate population mean (μ) to describe my population standard deviation (σ) where $s = \sigma$ (De Moivre, 1711 *translation by* McClintock, 1984). I also calculated the standard of error ($\sigma\bar{x}$) [see Fig. 4].

I made inferences about my populations standard deviation (σ) with the estimates computed from my sample (s) statistics (Roy, Acharya and Roy, 2016) [see 5.1]. My sample data $n=64$ yields statistical reliability (Kass, 2011) as my results represent more than the statistically acceptable 68% confidence interval or margin of error of ($\sigma\bar{x}$) being right in my population of 126 people (Abbott, 2016). A confidence interval for the mean average of ≤ 0.2 was small and I was confident to use my sample results to estimate or inference the populations' parameter figures [see 5.1].

I measured the variance (s^2) of each standard deviation (s) in my data [see Fig. 4]. I did this to see the average of the squared differences from the mean (\bar{x}) (Abbott, 2016). To calculate this I used SPSS 20® (IBM®, 2016) with my sample mean (\bar{x}) as my measure of central tendency or $\bar{x}=0$ [see Fig. 3]. For each number (x) the mean (\bar{x}) was subtracted and squared (2). Therefore the formula that I used for this calculation was

$$s^2 = \frac{\sum (x - \bar{x})^2}{N-1}$$

and I discussed the significant results [see 5.1].

With samples of around 30 participants or more a samples statistical quantity variable of standard deviation (s^2) was confidently used to estimate in my population (Roscoe, 1975 *cited in* Sekaran and Bougie,

2016). I wanted to test this hypothesis to see if I could use my sample as a model of its population (De Moivre, 1711 *translation by* McClintock, 1984). I did this by estimating the parameters and calculating the measure of variability of the estimate (Banerjee and Chaudhury, 2010) without assuming an underlying distribution in my sample ($n=64$). To visualise this I drew curves of distribution of my participants' perception across and through the central tops of each of the bar chart bars [see Fig. 2]. I examined these for either symmetry or for positive or negative skews.

I was interested in the dispersion or variability (s^2) and correlation of my processed data to show the measures of dispersion of student perception. I set the *alpha* (α) significance level of risk at $\alpha = 0.05$ as the criterion for statistically significant findings in my study (Abbott, 2016). Meaning that I would find any statistical significance of difference or variance between the lower and upper limit for the mean of my sample responses (\bar{x}) and my population mean (μ) within ordinary 2-sided or 2-tailed 95% confidence limits (Roy, Acharya and Roy, 2016). This confidence interval gives an estimated range of values which was likely to include my unknown population parameter (μ) (Kass, 2011).

A confidence level of 95% has a 2-sided or 2-tailed standard *z*-score (*z*) of 1.96 this means that I was 95% confident that my sample accurately reflected the perception of my population proportion with a minus 5% to plus 5% margin of error or confidence interval (*CI*) $CI = \pm 5\%$ (Banerjee and Chaudhury, 2010). I have at least 90% confidence in all of my data ($z = 2.576$) and as much as 99% confidence ($z = 1.64$) in many that my $n = 64$ person sample (\bar{x}) gives a likely indication of the $N = 126$ population values (μ) [see Fig. 4]. Meaning that I was confident that the true result lay within the range of values defined by these confidence intervals.

I wanted to analyse whether any difference of dispersion or variability (s^2) of student perception was a chance finding or large enough given the variability to be significant (Kass, 2011). To do this I measured how probable it was that an association could have arisen by chance and to do this I employed a *p*-value (Abbott, 2016). The test statistic *z*-score (*z*) was used to compute the *p*-value for the standard normal distribution or confidence level within the SPSS 20® programme (IBM®, 2016). The *p*-value measured how likely I was to get a certain sample amount or something more extreme (Banerjee and Chaudhury, 2010). A *p*-value less than $\alpha = 0.05$ or equal to $\leq \alpha = 0.05$ was considered statistically significant (Kass, 2011). A low *p*-value indicated that my data was

unusual, but it did not mean the effect was large (Roy, Acharya and Roy, 2016). I presented my processed data as a difference of dispersion or variability (s^2) [see Fig. 4]. These values correspond to the probability of observing such an extreme value by chance (Abbott, 2016) and are discussed later [see 5.1].

I wanted to know whether my $n=64$ sample was relevant to the larger population $N=126$ it was supposed to represent (Abbott, 2016). So I tested the significance of my data with inferential analysis (Kass, 2011). As a general linear model I employed a one-way analysis of variance table test or ANOVA one sample T-Test (t). I used this as the variance (s^2) within my data was known (see above). I was seeking either positive or negative t-test ratio results. The formula I used was

$$t = \frac{\text{statistic-parameter}}{\text{st. dev of statistic}} = \frac{\bar{x} - \mu}{s/\sqrt{n}}, \text{ where the standard error of the sample mean is } SE(\bar{x}) = s/\sqrt{n}.$$

By employing the T-Test (t) I assessed whether the mean of my sample (\bar{x}) and the mean of my population (μ) were statistically different (Abbott, 2016). I did this to measure the difference between the means relative to the variability of the means to see group difference [see Fig. 4]. As my sample was $n=64$ of my population $N=126$ the t distribution of my sample standard deviation (s) was closer to normal distribution or the confidence level $C/\pm 5\%$. This was because the sample standard error

(SE) approaches the true standard deviation p -value for larger sampled numbers. Cohen (1988) defined 0.2-0.49 as a small effect size, 0.50-0.79 as a moderate effect size, and ≥ 0.80 as a large effect size. As my sample was 50.8% of the definite population the population standard of error $\sigma_{\bar{x}}$ are shown to be very low [see Fig. 4]. I discuss the significance of these results in chapter 5 [see 5.1].

My mentor usually considers my feelings	Descriptive Statistics Based on 126 bootstrap samples ($b = 126$)		My mentor talked at me rather than listened to me	Descriptive Statistics Based on 126 bootstrap samples ($b = 126$)	
	95% Confidence Interval for Mean (\bar{x})	Standard Deviation (s)		95% Confidence Interval for Mean (\bar{x})	Standard Deviation (s)
ANOVA T-Test (t) $t = 14.680$	$\bar{x} = 2.1406$ Std. Error $\sigma_{\bar{x}} = 0.1458$	$s = 1.16656$ Variance $s^2 = 1.361$ Skewness = 1.080	ANOVA T-Test (t) $t = 16.442$	$\bar{x} = 2.3906$ Std. Error $\sigma_{\bar{x}} = 0.1453$	$s = 1.16315$ Variance $s^2 = 1.353$ Skewness = 0.805
Question 1 (1)			Question 2 (2)		
I looked forward to going to my shifts on practice placement	Descriptive Statistics Based on 126 bootstrap samples ($b = 126$)		My mentor talked to me like an individual	Descriptive Statistics Based on 126 bootstrap samples ($b = 126$)	
	95% Confidence Interval for Mean (\bar{x})	Standard Deviation (s)		95% Confidence Interval for Mean (\bar{x})	Standard Deviation (s)
ANOVA T-Test (t) $t = 15.752$	$\bar{x} = 3.0469$ Std. Error $\sigma_{\bar{x}} = 0.1934$	$s = 1.54745$ Variance $s^2 = 2.395$ Skewness = -0.107	ANOVA T-Test (t) $t = 14.084$	$\bar{x} = 2.2344$ Std. Error $\sigma_{\bar{x}} = 0.1586$	$s = 1.26920$ Variance $s^2 = 1.611$ Skewness = 0.984
Question 3 (3)			Question 4 (7)		
I was dissatisfied with what was done on practice placement	Descriptive Statistics Based on 126 bootstrap samples ($b = 126$)		My mentor tried hard to help me	Descriptive Statistics Based on 126 bootstrap samples ($b = 126$)	
	95% Confidence Interval for Mean (\bar{x})	Standard Deviation (s)		95% Confidence Interval for Mean (\bar{x})	Standard Deviation (s)
ANOVA T-Test (t) $t = 14.900$	$\bar{x} = 2.1563$ Std. Error $\sigma_{\bar{x}} = 0.1447$	$s = 1.15770$ Variance $s^2 = 1.340$ Skewness = 1.079	ANOVA T-Test (t) $t = 14.141$	$\bar{x} = 2.1719$ Std. Error $\sigma_{\bar{x}} = 0.1535$	$s = 1.22869$ Variance $s^2 = 1.510$ Skewness = 1.039
Question 5 (9)			Question 6 (13)		
At the end of my shift on practice placement I had a sense of job satisfaction	Descriptive Statistics Based on 126 bootstrap samples ($b = 126$)		My mentor often got side-tracked and did not stick to the main points	Descriptive Statistics Based on 126 bootstrap samples ($b = 126$)	
	95% Confidence Interval for Mean (\bar{x})	Standard Deviation (s)		95% Confidence Interval for Mean (\bar{x})	Standard Deviation (s)
ANOVA T-Test (t) $t = 13.687$	$\bar{x} = 2.2656$ Std. Error $\sigma_{\bar{x}} = 0.1655$	$s = 1.32428$ Variance $s^2 = 1.754$ Skewness = 0.760	ANOVA T-Test (t) $t = 12.870$	$\bar{x} = 1.9531$ Std. Error $\sigma_{\bar{x}} = 0.1517$	$s = 1.21407$ Variance $s^2 = 1.474$ Skewness = 1.246
Question 7 (15)			Question 8 (16)		

My mentor thought up innovative ideas for me	Descriptive Statistics Based on 126 bootstrap samples ($b = 126$)		My mentor helped me whenever I had trouble with my work	Descriptive Statistics Based on 126 bootstrap samples ($b = 126$)	
	95% Confidence Interval for Mean (\bar{x})	Standard Deviation (s)		95% Confidence Interval for Mean (\bar{x})	Standard Deviation (s)
ANOVA T-Test (t) $t = 15.194$	$\bar{x} = 1.6094$ Std. Error $\sigma_{\bar{x}} = 0.1059$	$s = 0.84735$ Variance $s^2 = 0.718$ Skewness = 1.665	ANOVA T-Test (t) $t = 12.632$	$\bar{x} = 1.9688$ Std. Error $\sigma_{\bar{x}} = 0.1558$	$s = 1.24682$ Variance $s^2 = 1.555$ Skewness = 1.177
Question 9 (17)			Question 10 (19)		
My practice placement was a waste of time	Descriptive Statistics Based on 126 bootstrap samples ($b = 126$)		My mentor seldom spoke to me	Descriptive Statistics Based on 126 bootstrap samples ($b = 126$)	
	95% Confidence Interval for Mean	Standard Deviation (s)		95% Confidence Interval for Mean (\bar{x})	Standard Deviation (s)
ANOVA T-Test (t) $t = 16.636$	$\bar{x} = 3.2187$ Std. Error $\sigma_{\bar{x}} = 0.1934$	$s = 1.54785$ Variance $s^2 = 2.396$ Skewness = -0.273	ANOVA T-Test (t) $t = 12.023$	$\bar{x} = 2.0469$ Std. Error $\sigma_{\bar{x}} = 0.1702$	$s = 1.36195$ Variance $s^2 = 1.855$ Skewness = 1.080
Question 11 (21)			Question 12 (25)		
My practice placement was boring	Descriptive Statistics Based on 126 bootstrap samples ($b = 126$)		My mentor was not interested in my problems	Descriptive Statistics Based on 126 bootstrap samples ($b = 126$)	
	95% Confidence Interval for Mean (\bar{x})	Standard Deviation (s)		95% Confidence Interval for Mean	Standard Deviation (s)
ANOVA T-Test (t) $t = 38.863$	$\bar{x} = 4.3594$ Std. Error $\sigma_{\bar{x}} = 0.1121$	$s = 0.89739$ Variance $s^2 = 0.805$ Skewness = -1.874	ANOVA T-Test (t) $t = 25.845$	$\bar{x} = 4.0469$ Std. Error $\sigma_{\bar{x}} = 0.1565$	$s = 1.25268$ Variance $s^2 = 1.569$ Skewness = -1.291
Question 13 (27)			Question 14 (31)		
I enjoyed going to my practice placement	Descriptive Statistics Based on 126 bootstrap samples ($b = 126$)		My mentor often planned interesting activities for me	Descriptive Statistics Based on 126 bootstrap samples ($b = 126$)	
	95% Confidence Interval for Mean (\bar{x})	Standard Deviation (s)		95% Confidence Interval for Mean (\bar{x})	Standard Deviation (s)
ANOVA T-Test (t) $t = 13.027$	$\bar{x} = 2.0781$ Std. Error $\sigma_{\bar{x}} = 0.1595$	$s = 1.27621$ Variance $s^2 = 1.629$ Skewness = 0.985	ANOVA T-Test (t) $t = 13.378$	$\bar{x} = 2.1094$ Std. Error $\sigma_{\bar{x}} = 0.1576$	$s = 1.26136$ Variance $s^2 = 1.591$ Skewness = 1.062
Question 15 (33)			Question 16 (35)		
My mentor was unfriendly and inconsiderate to me	Descriptive Statistics Based on 126 bootstrap samples ($b = 126$)		My mentor dominated our debriefing/reflective discussions	Descriptive Statistics Based on 126 bootstrap samples ($b = 126$)	
	95% Confidence Interval for Mean (\bar{x})	Standard Deviation (s)		95% Confidence Interval for Mean (\bar{x})	Standard Deviation (s)
ANOVA T-Test (t) $t = 14.665$	$\bar{x} = 2.0625$ Std. Error $\sigma_{\bar{x}} = 0.1406$	$s = 1.12511$ Variance $s^2 = 1.266$ Skewness = 0.978	ANOVA T-Test (t) $t = 12.857$	$\bar{x} = 2.2812$ Std. Error $\sigma_{\bar{x}} = 0.1812$	$s = 1.41947$ Variance $s^2 = 2.015$ Skewness = 0.753
Question 17 (37)			Question 18 (38)		
My practice placement was interesting	Descriptive Statistics Based on 126 bootstrap samples ($b = 126$)		Figure 4 - collection standard deviation, range of variance from mean central tendency with standard of error, skew and t -test		
	95% Confidence Interval for Mean (\bar{x})	Standard Deviation (s)			
ANOVA T-Test (t) $t = 27.074$	$\bar{x} = 3.9219$ Std. Error $\sigma_{\bar{x}} = 0.1448$	$s = 1.15888$ Variance $s^2 = 1.343$ Skewness = -1.170			
Question 19 (39)					

The presence of heteroscedasticity was considered for my descriptive statistical analysis of variance (Roy, Acharya and Roy, 2016).

Homogeneity of variance was present in that there were no errors or

omitted variables [see 4.2; Table 22]. Also, my data has a constant variance of error [see Fig. 4]. This was because my group-sample data was greater than 30 participants meaning it conformed to a normal curve of distribution (De Moivre, 1711 *translation by* McClintock, 1984). I was therefore confident that the variability of these variables were equal across the range of values in this data and therefore homogeneity of variance can be assumed without violation.

After analysing my quantitative data I looked for numerical reliable regularities and associations within category distributions and honed in on the statistical differences [see 5.1]. These were beyond chance findings and large enough given the variability to be significant (Kass, 2011). Of particular interest were skewed distributions that were not symmetrical (De Moivre, 1711 *translation by* McClintock, 1984). This was where the bulk of types or universals were not seen in the middle ranges as agree or disagree [see Fig. 2]. Instead the bulk were piled up toward the two bipolar psychological extremes at one end or the other at the strongly agree/ agree end or the disagree/strongly disagree end as either under or over represented in that particular category.

The majority of my distributions (17 out of 19 data-sets) were either positively skewed and or negatively skewed [see Fig. 2]. Observation

revealed 14 negative skews and three positive ones [see 5.1.1] and within my data the measure of central tendency or mean average was not found in the middle of the range of agree/disagree. I calculated this by computing the mean average and looking at the skewed shapes where the mean was distant from the central tendency mode average [see Fig. 2]. The reverse Likert-scale scores (Likert, 1932) [see 4.2.1; Table 25] impact the actual meaning of my participants positive or negative perception (Merleau-Ponty, *in Cobb translation by Edie* 1964). As this was of utmost importance I continued to use my same yellow and green colour-coding system [see Fig. 4]. I designed my qualitative enquiry around my participant perspectives to better understand the lived-experiences of students with dyslexia (Makkreel and Rodi, 2010).

4.2.3 Triangulation: Analysing my qualitative sample-groups perceptions

Eight of my e-survey (Knowles, 2010a) participants volunteered and proceeded with my interviews [see 3.5.2]. I analysed the comparisons for all eight of my interview participants for all nineteen datum-sets to see if there was anything interesting to say about these in comparison to the full cohort of 64 e-survey participants. To identify my eight participants e-survey data match I asked them each to each complete a repeat of the five key characteristic demographic data informatics on a

paper questionnaire for me. Then I tracked the date and time of their e-mail to me (volunteering to participate in my interview) back to the last completed surveys until I had a key characteristic set match. Thus I was able to triangulate my participants' e-survey to their interview by matching the two together [see Table 27].

e-survey date, participant number and row	Interview date	Participant number	Age	Gender	Year of BSc (Hons) course	Field of pre-registration nursing studies	Age diagnosed dyslexia	Diagnosis timing	Do you see yourself as having a disability? Yes/No	Ethnicity	Allocated pseudonym [see 3.3.2; Table 18]
10.06.15 #28 row31	22.06.15	#1	51	Male	3rd year	Mental Health	50 years old	After start LSBU	Yes	Black or black British: Caribbean	Adam
15.05.15 #23 row26	24.06.15	#2	31	Female	2nd year	Child	30 years old	After start LSBU	No	Asian or Asian British: Indian	Beth
03.06.15 #26 row29	07.07.15	#3	43	Female	3rd year	Adult	43 years old	After start LSBU	Yes	Black or black British: African	Cathy
21.07.15 #37 row40	01.10.15	#4	20	Female	1st year	Adult	7 years old	Before start LSBU	Yes	White: British	Doris
30.06.15 #29 row32	01.10.15	#5	37	Female	2nd year	Mental Health	36 years old	After start LSBU	Yes	Black or black British: African	Eva
09.07.15 #31 row34	05.11.15	#6	40	Female	2nd year	Adult	39 years old	After start LSBU	Yes	Any other white background	Freda
21.07.15 #32 row35	05.11.15	#7	22	Female	2nd year	Adult	20 years old	Before start LSBU	Yes	Mixed group: White and black Caribbean	Gill
03.12.15 #52 row55	29.01.16	#8	18	Female	1st year	Child	9 years old	Before start LSBU	Yes	White: British	Helen

Table 27 - triangulation match of e-survey to interview participant data

4.3 Interviews: Analysing my eight participants common characteristic profiles

Each of my eight interview participants provided their five common characteristics and these are depicted alongside the data from my e-survey participants [see Table 28].

Demographic Raw Data-Sets	Research Participants:	
Birth gender:	Qualitative Interview [n=8]	Quantitative Survey [n=64]
Male	1	7
Female	7	57
Year of BSc Hons:		
1st years	2	20
2nd years	4	27
3rd years	2	17
Field of pre-registration nursing studies:		
Adult	4	38
Mental Health	2	9
Child	2	17
Ethnic Background:		
White: British	2	27
White: Irish	0	1
Any other white background	1	3
Black or black British: Caribbean	1	5
Black or black British: African	2	19
Mixed group: White & black Caribbean	1	3
Mixed group: White & black African	0	3
Any other mixed background	0	2
Asian or Asian British: Indian	1	1
Current Age:		
18-21 years old	1	11
22-29 years old	2	12
30-39 years old	2	25
40-49 years old	2	14
50-59 years old	1	2
Age of Dyslexia Diagnosis		
Under 21	2	19
22-29 years old	1	8
30-39 years old	3	24
40-49 years old	1	12
50+ years old	1	1
Diagnosis timing:		
Before starting nursing course	3	24
After starting nursing course	5	40
Disability (how the research sample characterise themselves)		
Yes	7	51
No	1	13

Table 28 - interview and questionnaire participants' characteristics

Each of my interview participants had unique information to provide me as data on my phenomenon of interest for me to interpret [see 5.2]. To familiarize myself with them as people I built participant profiles in preparation to engage with the analysis of their descriptions [see Table 29] and here their pseudonyms were utilized [see 3.3.2; Table 15].

<p>Adam: 51 year old, male of Black British: Caribbean ethnicity. 3rd year, mental health field BSc (Hons) pre-registration nursing student. Diagnosed, age 50, after starting course at LSBU during his 2nd year of studies. Does see himself as 'Yes - disabled'.</p>
<p>Beth: 31 year old, female of Asian British Indian ethnicity. 2nd year, child field BSc (Hons) pre-registration nursing student. Diagnosed, age 30, after starting course at LSBU during her 1st year of studies. Does not see herself as disabled.</p>
<p>Cathy: 43 year old, female of black African ethnicity. 3rd year, adult field BSc (Hons) pre-registration nursing student. Diagnosed, age 43, after starting course at LSBU during her 3rd year of studies. Does see herself as 'Yes - disabled'.</p>
<p>Doris: 20 year old, female of white British ethnicity. 1st year, adult field BSc (Hons) pre-registration nursing student. Diagnosed, age 7, before starting course at LSBU. Does see herself as 'Yes - disabled'.</p>
<p>Eva: 37 year old, female of black British African ethnicity. 2nd year, mental health field pre-registration nursing student. Diagnosed, age 36, after starting course at LSBU during her 1st year of studies. Does see herself as 'Yes - disabled'.</p>
<p>Freda: 40 year old, female of white Polish ethnicity. 2nd year, adult field BSc (Hons) pre-registration nursing student. Diagnosed, age 39, after starting course at LSBU during her 1st year of studies. Does see herself as 'Yes - disabled'.</p>
<p>Gill: 22 year old, female of mixed group white/black Caribbean ethnicity. 2nd year, adult field BSc (Hons) pre-registration nursing student. Diagnosed, age 20, at college on pre-nursing course before starting at LSBU. Sees herself as 'Yes - disabled'.</p>
<p>Helen: 18 year old, female of white British ethnicity. 1st year, child field BSc (hons) pre-registration nursing student. Diagnosed, age 9, before starting course at LSBU. Does see herself as 'Yes - disabled'.</p>

Table 29 - interview sample-group characteristics as individual profiles

4.4 Interviews: Analysing my sample-groups descriptions with interpretative phenomenology

When I had collected the first retrospective interview datum-set (Grove, Gray and Burns, 2015) [see 3.5.2] from my first participant, who I named Adam [see 3.3.2 and Table 29], I prepared it for my phenomenological interpretation (Braun and Clarke, 2013). I processed the verbatim of Adam's descriptions of his lived-through experience (van Manen, 2016) held on my audio-recording into lexical raw data. I did this by

transcribing his descriptions word-for-word into a Microsoft® Office Word™ document (Hesse-Biber, 2016).

I transferred this Word™ (Microsoft® Office™, 2013) transcript into NVivo 10® qualitative data management system (QSR International®, 2016). I initially used this medium for the storage and organisation of Adam's interview datum-set (Braun and Clarke, 2013). NVivo 10® (QSR International®, 2016) stores datum segments organised by the research analyst in a hierarchical clustered dendrogram index system. However, I abandoned this system early-on due to human factors (my own difficulties with the software, and the fatal error of deleting my first fully processed datum-set). Due to this unforeseen problem (FHEQ, 2008) I re-commenced my method of raw data storage. I also considered that NVivo 10® (QSR International®, 2016) data management system was not best suited to phenomenological interpretation (Willig, 2013). I transferred Adam's transcript datum-set from Word™ into an Excel™ spreadsheet (Microsoft® Office™, 2013). I organised this into a tab in preparation for my analytic induction (Znaniecki, 1934). To do my inductive analysis I planned to make full use of my *a posteriori* understanding of my phenomenon to interpret meaning from Adams descriptions (Evans and Over, 2013).

I wanted to get to know this raw datum-set to enable a deep analysis (Robinson, 2014) of Adam's psychosocial constructs of his relative world view (Ritchie *et al.*, 2013) and his subjective interaction with the world (Dumez, 2016). These were objectified in the language of Adam's descriptions of his practice placement experiences (Gadamer, 1976 *cited in* Friesen, Henriksson, and Saevi, 2012) [see 3.1.1]. To familiarise myself with the content of Adam's raw datum-set, I used both the audio-recording and typed transcript media to focus on the detail (Silverman, 2015). I undertook repeated careful listening to Adam speaking on the audio-recording alone and in conjunction with reading his transcript (Braun and Clarke, 2013) stored in Excel™ (Microsoft® Office™, 2013). I did this many times over the course of a whole day to assimilate and digest the fragments of audio-recording and datum segments in Adams descriptions (Wertz *et al.*, 2011). I was listening to Adams first-person accounts of his positive and negative subjective experience (Langdridge and Hagger-Johnson, 2013). I noticed how Adams pauses in dialogue foreshadowed some difficulty (Smith, Flowers and Larkin, 2009) and I highlighted these in the text on the Excel™ spreadsheet (Microsoft® Office™, 2013). I focused on sequences of utterances and within these I made sense of Adam's dialogue (Willig, 2012). I paid attention to items of potential interest (Braun and Clarke, 2013) with an "open focus" (Cohen, Manion and Morrison, 2017, p. 150).

When I felt familiar with the content of Adam's transcript I engaged with emic analysis (Polit and Beck, 2012). I did this by printing out his transcript from Word™ (Microsoft® Office™, 2013) to examine and annotate it in paper form. I believe that I interpret what I hear and see in the world around me every-day (Silverman, 2015) and so I was looking at small parts or fragments of Adams datum and letting something show itself to me (van Manen, 2016). I looked at Adams words, extracts of sentences and episodes of events he described (Smith, 2007). I mean that, to understand the datum parts I looked at the whole life-experience in Adams datum-set (van Manen, 2016). I did this by reading a word within a sentence as this gave me more information. Then I looked at the sentence within the larger sequence of a described event to inform my reading (Smith, 2007). The series of Adams' whole events illuminated the parts and helped the meaning to show itself (van Manen, 2016).

I analysed Adams raw datum-set through the lens of an interpretative phenomenologist (Thorne, 2016). By 'pheno' I mean as described by Adam (van Manen, 2016) and my lens focused on the hermeneutics of my interpretations (Agrey, 2014). I analysed my first transcript datum-set for insightful understanding of the moment as-lived by Adam (Levering, 2006). I was consciously being objective when analysing Adams'

description and interpreting meaning as it was important for me to be true to Adam about what it was like for him (van Manen, 2016). I undertook initial noting and handwrote annotations of “free associating comments” onto my paper transcript (Braun and Clarke, 2013, p. 202-203; table 9.1). I found two new broad categories within Adam’s data relating to practicum activity and I added the themes of acquiring ‘new clinical skills’ and ‘pedagogical need’ to my ‘concept book’ framework (Brenner, Brown and Canter, 1985) thus developing my etic analytic scheme (Silverman, 2015) with emic constructs (Polit and Beck, 2012).

When I had completed the handwritten interpretive notation on my first transcript, I typed the notations into the corresponding Excel™ (Microsoft® Office™, 2013) text. I had been interpreting the meanings of Adams’ expressions (Willig, 2012) and interestingly the pauses I had previously highlighted on my Excel™ spreadsheet (Microsoft® Office™, 2013) were invariably followed by a unit of text that I had annotated a notation to (Smith, Flowers and Larkin, 2009) on the Word™ (Microsoft® Office™, 2013) transcript document.

Following my emic raw data processing (Polit and Beck, 2012) I focused on the etic inspection of Adams transcript (Silverman, 2015). I used Excel™ (Microsoft® Office™, 2013) to search for connections across

this datum-set and generated the emergent sub-ordinate theme of 'pedagogical needs' into a superordinate theme of 'new clinical skills' (Braun and Clarke, 2013). It was instrumental in interpreting my interview datum-set (Willig, 2012) with inductive reasoning as my own *a posteriori* understanding was also the possible experience of Adam, and I interacted with Adams datum-set as a "meaning maker" (Dewar, 2016) seeking explanatory findings. It was necessary for me to interpret meaning to be able to construct my thesis in the spirit of phenomenological inquiry (Reiners, 2012). I interpreted my phenomenon into my theory by using the contextual key themes of my coursework (LSBU, 2017). To accomplish this I used the broad pre-ordinate (Cohen, Manion and Morrison, 2017) framework of diversity, inclusion & equality (LSBU, 2017) held within my 'concept book' (Brenner, Brown and Canter, 1985). This enabled me to inductively apply wisdom with reasoning from my own professional *a posteriori* understanding (Evans and Over, 2013).

The abstract concepts on issues of inclusivity in practice placements involving diversity, equality and reasonable adjustments for learning to take place (Great Britain. Equality Act, 2010) emerged from Adam's descriptions. This processing involved hermeneutic circles (Heidegger, 1962) where I was constantly digging deeper with my interpretation for a

fusion of horizons (Gadamer, 2004) or co-constitutionality (Flood, 2010) between Adam and myself (Vessey, 2009) to enable my understanding of Adams experience (Streubert and Carpenter 2011). I constantly questioned and re-questioned my *a priori* knowledge on dyslexia [see 2.1] during my hermeneutic circle of understanding (Matua and Van Der Wal, 2015). In doing this I was blending my *a priori* knowledge and a *posteriori* understanding of my phenomenon with what Adam described (McConnell-Henry, Chapman and Francis, 2009).

In my Excel™ spreadsheet I used the find and select on the editing tab and I also used the thesaurus in the review tab (Microsoft® Office™, 2013) to search for words with the same meanings within Adams' transcript. I completed my interpretation of my first transcript datum-set when I felt that I had achieved a subjective deep understanding of Adams experience (Flood, 2010). However, I accept that "perfect understanding is an ideal which is ever approximated but never attained" (Schleiermacher, *in* Kimmerle *translation by* Duke, 1977, p. 6) and knowing when to stop was important (Smith, 2007).

Each time I had another interview completed with my next participant, I continued with a circular process of interpretive data analysis (Reiners, 2012) as I carried out all of these steps with each of the other seven

transcripts. To ensure comprehensive data treatment (Silverman, 2015) all eight of my datum-sets were included in my analysis method and all parts of each transcript were inspected examined and noted (Braun and Clarke, 2013).

To collate my data-set I added all eight participants' transcripts onto the same Excel™ spreadsheet tab (Microsoft® Office™, 2013). The eight individual analysed transcripts from Adam, Beth, Cathy, Doris, Eva, Freda, Gill and Helen formed my data-set collection of elements constituting each participants' world view of my phenomenon (Ritchie *et al.*, 2013). I listened to my sample-groups audio-recordings and read the corresponding annotated transcript to focus on my collection (Silverman, 2015). Ambiguity in a datum-set helped me see something going on in my whole participants' data-sets. I sensed the connections within the shared and reoccurring commonalities (Braun and Clarke, 2013) and this activity gave me a sense of the whole meaning (Cohen, Manion and Morrison, 2017) of my phenomenon.

Using the find and select functions on the editing tab in my Excel™ spreadsheet (Microsoft® Office™, 2013) I found sets of annotations and identified the commonalities on the human way of being or living my phenomenon and I categorised these (Miles, Huberman and Saldaña,

2014) as identified patterns of ‘social relations’, ‘psychological relations’, ‘physical deficit’ and ‘pedagogical need’ (De Chesnay, 2014). I did this by finding the sub-ordinate themes or typologies across my whole data-set (Patton, 2014). I aggregated my data from my eight participants together into superordinate themes which constituted the prevailing viewpoints of my sample-group (Thorne, 2016). Thus a fuller picture of my phenomenon (Silverman, 2015) on lived-experience and being a student nurse with dyslexia on practice placement was formed (Makkreel and Rodi, 2010). I then produced a tabular representation of my analysis that shows how it all fits together (Chamberlain, 2014 cited in Hefferon et al., 2017) [see Table 30].

Findings that emerged very clearly from the sub-group interview data:				Interpretative analysis:		
Notations: onto each datum transcript using emic analysis (show itself) on:- ▪ what clinical assessor behaviours towards student nurses with dyslexia were actually like and how these felt ▪ problems of executive function actually experienced in placements				Categories: ▪ annotations of broad typologies alongside notations as free-associating comments		
				Themes: ▪ Sub-ordinate etic analysis of data-set ▪ pre-ordinate framework		
				Superordinate prevailing world view interpretations of social injustice grounded in data-set		
Welcoming	Helpful	Kind	Asks	Interpersonal	Diversity	Social Isolation
Unwelcoming	Unhelpful	Unkind	Doesn't ask	Social Relations	Homogeneity	
Speaks with	Involves	Concern for welfare	Justice	Psychological	Inclusion	Discrimination
Ignores	Avoids	No concern welfare	Ridicule	Feelings	Exclusion	
Interested	Encouraging	Support difference	Enabling	Impeded	Equality	Reasonable Adjustments
Uninterested	Discouraging	Sameness	Disabling	Pedagogy	Inequality	Discouraged
Word recognition	Fast note taking	Copying	Organising	Difficulties	Handover	Individual Pedagogic Needs Not Met
Listening	Remembering	Sequencing	Repeats	experienced due to dyslexia deficit	Clinical Skills	
Quiet to document	Spelling checks	Writing	Reading		Documentation	

Table 30 - analysis of findings on being a student nurse with dyslexia

My sample-group provided descriptions grounded in my participants accounts (Gadamer, 1976 cited in Friesen, Henriksson, and Saevi, 2012) on the most common stage-two mentor (NMC, 2008) behaviours

they experienced. I gained a sense of my sample-group experience as a whole to understand the full richness on how nursing students with dyslexia experience practice placements (Langdridge and Hagger-Johnson, 2013). It is these meanings that I interpreted (Chamberlain, 2014 *cited in* Hefferon *et al.*, 2017) synthesising the universal meaning embedded in my participants lived-experience (van Manen, 2016). This unique insight from my sample-group illuminates elements of a previously unknown world (Hefferon *et al.*, 2017). I had uncovered new useful theory (FHEQ, 2008) on how students with dyslexia exist in practice placements, meaning what it is actually like for them (van Manen, 2016) and why they experience practice placements the way that they do (Hartas, 2015).

My participants' recollections of their lived-experiences resonated with my sense of validated lived life, therefore I recognised elucidation to the lived meaning of their experience as if I have had it or could have had it myself (van Manen, 2016). By this I mean that my circles of phenomenological inquiry was from participant description to resonance with my sense of lived life (Given, 2015).

At the heart of my phenomenological research was the respect for and desire to 'give voice' to my participants themselves (Rao and Donaldson,

2015). This involved weaving together vivid data extracts from my dataset in Excel™ (Microsoft® Office™, 2013) to provide my thesis readership with a coherent and persuasive description and interpretation of my participants human experience of my phenomenon (Standing, 2009). Writing was an integral element of synthesising my findings as I contextualised them in relation to published research [see 5.2].

5.0 Results, findings and discussion:

In section 5.1.1 of this chapter I synthesise and present my descriptive enquiry (Morse and Niehaus, 2016) quantitative datum individual results using my psychometric measurements (University of Cambridge, 2015). My descriptive statistical analysis (Roy, Acharya and Roy, 2016) [see 4.2.2] is summarised in section 5.1.2 and this is my group-participants' perceptions (Merleau-Ponty, *in Cobb translation by Edie* 1964) from my e-survey (Knowles, 2010a) [see 3.5.1]. My synthesis of Fig.'s 3 and 4 [see 4.2.2] are converted from numerical data into language that makes sense of the summarised results of my group-participants perception of my phenomenon. My results are then discussed in relation to my population and fellow researchers' results from Chan's questions (Chan, 2001) [see 5.1.2].

To generate an integrated perspective (Harvey and Land, 2016) the mixed-method intersection of my quantitative and qualitative enquiry (Hay, 2016) was triangulated (Andrew and Halcomb, 2009) [see 3.1] during the interpretative stage of my research process (Morse and Niehaus, 2016) [see 5.1.3]. I present the triangulation of my qualitative group-participants quantitative results [see 4.2.3] which subsequently contributed toward my interviews [see 3.2.2 and 3.5.2].

Section 5.2 shows my sequential enquiries (DeCuir-Gunby and Schutz, 2016) qualitative explanatory data findings from my research core component of my ontology-interviews (Gubrium *et al.*, 2012) [see 3.5.2]. These are presented as my interpretative phenomenology (Parahoo, 2014) [see 4.4] of my group-participants human lived-experiences (Heidegger, 1962) [see 3.1]. My findings are then discussed in relation to fellow researchers' findings on my phenomenon [see 5.2.1.1, 5.2.2.1 and 5.2.3.1].

5.1 Results: My quantitative synthesis and descriptive theory

The abbreviated survey tool (Salamonson *et al.*, 2011) [see 3.2.1.1] comprises 19 of Chan's questions (2001) across five descriptor categories with an explanation of each for; satisfaction, personalisation; student involvement, task orientation and innovation [see Table 31]. I measured my $n=64$ participants' perceptions via my e-survey (Knowles, 2010a) [see 3.2.1] for the two domains of Salamonson *et al.*'s (2011) survey instrument [see 4.2.1]

Domain one on the quality of practice placements or "satisfaction with clinical placement" (Salamonson *et al.*, 2011, p. 2671) has the criteria shown in pink and domain two of mentor support or "clinical facilitator

support of learning” (Salamonson *et al.*, 2011, p. 2671) has the criteria shown in orange [see Table 31]. I included Chan’s (2001) original question number, as shown in brackets, to allow other researchers to recreate either Chan’s (2001) or Salamonson *et al.*’s (2011) surveys to verify or falsify my research results on my phenomenon (Smith and Ceusters, 2010) [see 6.1].

Clinical Learning Environment Inventory (CLEI®) Scale Descriptors (Chan, 2001)↓	Salamonson <i>et al.</i> (2011)↓
Satisfaction - extent of enjoyment of practice placement:- I looked forward to going to my shifts on practice placement; I was dissatisfied with what was done on practice placement; At the end of my shift on practice placement I had a sense of job satisfaction; My practice placement was a waste of time; My practice placement was boring; I enjoyed going to my practice placement; My practice placement was interesting	Question# 3(3), 5(9), 7(15), 11(21), 13(27), 15(33), 19(39)
Personalisation - emphasis on opportunities for individual student to interact with mentor and mentors concern for student’s personal welfare:- My mentor usually considered my feelings; My mentor talked to me like an individual; My mentor tried hard to help me; My mentor helped me whenever I had trouble with my work; My mentor seldom spoke to me; My mentor was not interested in my problems; My mentor was unfriendly and inconsiderate towards me	Question# 1(1), 4(7), 6(13), 10(19), 12(25), 14(31), 17(37)
Student Involvement - extent to which students participate actively and attentively in clinical discussion:- My mentor talked at me rather than listened to me; My mentor dominated our debriefing/reflective discussions.	Question# 2(2), 18(38)
Task Orientation - extent to which placement activities are made clear and well organised:- My mentor often got side-tracked and did not stick to the main points;	Question# 8(16)
Innovation - extent to which mentor plans new, interesting and productive experiences, teaching techniques, learning activities and patient allocations:- My mentor thought up innovative learning ideas for me; My mentor often planned interesting activities for me;	Question# 9(17), 16(35)

Table 31 - Chan's five-scale descriptor explanations

5.1.1 Resulting 64 participant individual perceptions

Using psychometric measurements (University of Cambridge, 2015)

[see 4.2.1] I present my $n=64$ participants individual quantitative data results for domain one on their perceptions of the quality of practice placements (Salamonson *et al.*, 2011) within their perceived extent of enjoyment of practice placement (Chan, 2001) [see Table 32].

Participant#	Question# (Salamonson <i>et al.</i> , 2011) with Chan's question# (2001) in brackets							Participant#	Question# (Salamonson <i>et al.</i> , 2011) with Chan's question# (2001) in brackets						
	3 (3)	5 (9)	7 (15)	11 (21)	13 (27)	15 (33)	19 (39)		3 (3) cont	5 (9) cont	7 (15) cont	11 (21) cont	13 (27) cont	15 (33) cont	19 (39) cont
1	5	1	5	5	5	1	4	33	2	1	2	2	4	2	4
2	4	2	4	4	5	4	4	34	5	2	2	2	4	1	4
3	2	2	4	4	4	2	2	35	4	4	2	1	4	1	4
4	1	4	5	5	5	1	5	36	1	5	1	1	1	1	2
5	4	2	1	2	5	1	5	37	1	5	1	2	5	1	2
6	1	1	2	1	5	1	4	38	2	2	4	5	4	1	5
7	1	1	2	5	5	1	4	39	2	2	1	5	5	1	5
8	5	4	1	5	4	2	5	40	5	2	1	4	5	4	4
9	4	1	4	1	4	1	1	41	1	2	1	4	4	1	4
10	1	2	1	2	5	1	4	42	4	4	5	5	4	2	5
11	5	1	1	1	5	1	4	43	2	2	1	1	4	2	4
12	2	4	4	2	5	2	5	44	5	1	1	5	5	4	5
13	1	1	4	2	5	4	4	45	5	2	1	1	4	5	5
14	1	2	1	1	5	2	2	46	4	1	4	5	5	4	4
15	2	2	2	4	5	2	2	47	4	4	4	1	5	1	4
16	2	4	1	5	2	1	5	48	2	2	2	4	4	2	5
17	4	1	4	5	5	2	1	49	2	2	2	4	4	2	2
18	5	5	1	2	5	5	4	50	4	2	2	2	5	1	4
19	1	2	1	4	4	1	5	51	4	2	2	4	2	4	4
20	4	2	2	4	4	4	5	52	5	1	1	1	5	1	4
21	2	2	4	2	5	1	2	53	4	1	2	4	5	2	4
22	2	2	4	4	5	2	5	54	5	2	1	4	4	1	1
23	4	1	2	5	4	4	5	55	1	2	1	4	4	1	5
24	4	4	2	5	4	2	4	56	4	4	2	5	5	4	4
25	5	2	1	1	5	5	4	57	1	4	2	2	4	4	5
26	5	1	1	5	5	1	4	58	5	1	1	5	5	2	4
27	4	1	2	1	5	2	5	59	5	1	1	5	5	1	5
28	2	2	2	4	4	2	4	60	1	2	2	4	4	4	4
29	2	2	2	4	4	2	4	61	1	2	2	2	4	4	4
30	4	2	4	4	2	1	2	62	4	2	5	4	5	2	5
31	4	2	4	1	2	2	5	63	4	2	4	4	5	1	2
32	1	1	2	2	5	2	5	64	2	1	2	2	4	1	4

Table 32 - n=64 perceptions on the quality of practice placements

In Table 33 I present my $n=64$ participants' individual data results for domain two on their perceptions of mentor support in their practice placements (Salamonson *et al.*, 2011). This includes 'task orientation' meaning the extent to which placement activities are made clear to students and well organised by mentors. The mentoring pedagogy of 'innovation' was measured where mentors plan new, interesting and productive experiences for students through their teaching techniques, learning activities and patient allocations. It also includes 'student

involvement' meaning the extent to which students participate actively and attentively in clinical discussion with their mentors. Overall emphasis was on opportunities for individual students to interact with their mentor and the mentors concern for student's welfare within 'personalisation' is included (Chan, 2001) [see Table 33].

Participant#	Question#(Salamonson et al., 2011) with Chan's question#(2001) in brackets																		Participant#	Question#(Salamonson et al., 2011) with Chan's question#(2001) in brackets																	
	1 (1)	2 (2)	4 (7)	6 (13)	8 (16)	9 (17)	10 (19)	12 (25)	14 (31)	16 (35)	17 (37)	18 (38)	cont	cont	cont	cont	cont	cont		cont	cont	cont	cont	cont	cont												
1	2	4	4	4	4	2	1	1	5	2	1	4	33	1	2	2	2	2	1	2	4	5	1	2	1	cont											
2	2	4	5	1	1	2	5	4	4	4	4	1	34	2	2	4	4	2	2	2	2	2	2	1	1	cont											
3	4	4	1	1	1	1	1	2	5	4	2	2	35	4	4	2	4	2	2	2	2	5	2	2	5	cont											
4	2	2	2	2	1	1	1	1	4	1	1	4	36	1	5	1	1	2	1	1	1	5	1	1	1	cont											
5	2	2	1	4	1	1	1	2	4	1	4	4	37	1	1	1	1	1	1	1	1	5	1	1	1	cont											
6	1	2	2	2	2	1	1	4	2	2	2	1	38	1	2	4	2	4	4	1	2	1	2	2	2	cont											
7	1	2	2	1	2	4	1	2	2	2	2	5	39	1	2	2	1	1	1	1	2	1	1	2	4	cont											
8	4	2	2	2	4	2	4	1	4	4	2	4	40	1	1	2	5	4	2	5	1	4	2	4	2	cont											
9	2	2	4	2	1	1	1	1	4	1	1	1	41	5	1	4	5	1	2	1	4	4	2	4	2	cont											
10	5	5	1	2	1	1	1	4	5	2	4	1	42	1	2	1	1	1	1	2	2	1	1	1	4	cont											
11	5	5	1	1	4	2	4	1	4	2	4	1	43	1	2	1	1	1	2	2	2	5	1	1	1	cont											
12	1	1	2	1	1	1	1	5	5	4	1	2	44	2	2	1	2	5	1	4	1	4	5	2	2	cont											
13	1	1	2	1	1	1	1	1	5	1	1	2	45	1	2	5	2	4	1	4	1	4	1	5	1	cont											
14	4	2	1	2	2	1	2	4	5	1	2	1	46	2	2	2	1	1	2	1	1	5	2	4	5	cont											
15	2	2	2	2	1	4	2	1	5	5	2	1	47	4	2	2	1	4	2	1	2	4	4	1	1	cont											
16	2	4	2	2	1	1	2	1	1	1	4	5	48	2	2	4	2	2	1	1	4	5	1	2	2	cont											
17	4	4	2	2	2	1	1	4	2	4	4	1	49	2	2	1	4	1	1	4	1	4	2	1	1	cont											
18	4	4	4	4	5	2	1	5	4	2	2	4	50	2	4	2	2	2	4	2	2	5	2	2	1	cont											
19	2	2	2	2	1	1	2	1	5	2	1	1	51	2	2	2	2	2	2	2	2	5	2	2	2	cont											
20	2	2	2	2	2	1	2	1	4	2	1	4	52	1	1	4	2	4	2	2	1	4	2	2	1	cont											
21	1	1	1	1	1	1	1	1	5	1	2	1	53	1	1	2	2	1	1	1	1	5	1	1	1	cont											
22	1	1	1	2	1	1	4	1	5	1	2	1	54	4	4	5	4	4	2	1	1	4	4	4	2	cont											
23	2	2	2	4	2	2	1	5	2	2	4	4	55	2	4	2	1	5	1	1	5	5	4	2	2	cont											
24	2	2	2	4	1	2	1	4	5	2	1	4	56	2	2	1	2	2	2	4	1	2	2	1	4	cont											
25	2	4	5	5	2	2	5	1	5	5	2	1	57	2	2	4	4	1	1	4	4	2	2	1	5	cont											
26	4	4	1	1	2	2	1	1	4	1	1	2	58	2	4	5	5	2	2	1	1	5	5	1	2	cont											
27	1	1	2	2	1	1	1	1	5	1	1	2	59	4	4	4	1	2	4	1	1	4	1	2	2	cont											
28	2	1	2	2	2	1	4	2	4	4	2	5	60	2	2	1	2	1	1	1	2	5	4	1	4	cont											
29	2	2	1	2	1	1	2	2	4	1	1	1	61	2	2	2	2	1	1	4	2	4	1	4	4	cont											
30	2	2	2	1	2	2	2	1	5	2	2	2	62	2	2	2	1	1	1	2	1	5	2	2	1	cont											
31	2	1	1	1	2	2	2	2	5	2	2	2	63	2	2	1	1	2	2	2	5	5	1	2	1	cont											
32	1	2	2	2	1	1	2	1	5	1	2	2	64	1	2	1	2	1	1	2	1	2	1	2	2	cont											

Table 33 - n=64 perceptions of mentor support

In the yellow columns [see Tables 32 and 33], the higher the score from the scale (i.e. Likert-scores of four and five) for the 10 Likert-scale score (Likert, 1932) questions (#s 1(1), 3(3), 4(7), 6(13), 7(15), 9(17), 10(19),

15(33), 16(35), 19(39)) then the more positive the individual students' perception was (Merleau-Ponty, *in Cobb translation by Edie 1964*) [see 4.2.1; Table 24].

For example in the question 'at the end of my shift on practice placement I had a sense of job satisfaction' Salamonson *et al.*'s. (2011) question number seven and Chan's question number 15 (2001) [see Table 32] there were four of my individual participants out of $n=64$ who perceived strong agreement that at the end of their shift they had a sense of job satisfaction with each participant scoring five on the Likert-scale score (Likert, 1932). Thus each participant numbered; 1, 4, 42 and 62 showed a positive perception toward answering this question. In other words four of my individual participants perceived strong agreement that 'at the end of [their] shift on practice placement [they] had a sense of job satisfaction'. There were in contrast 23 of my $n=64$ individual participants who strongly disagreed that at the end of their shift on practice placement they had a sense of job satisfaction with each of them scoring one on the Likert-scale score (Likert, 1932). Thus each individual participant numbered; 5, 8, 10, 11, 14, 16, 18, 19, 25, 26, 36, 37, 39, 40, 41, 43, 44, 45, 52, 54, 55, 58 and 59 showed a negative perception toward answering this question [see Table 32].

In other words 23 of my individual participants perceived that ‘at the end of [their] shift on practice placement [they strongly disagreed that they did not have] a sense of job satisfaction’ [see 4.2.2; Fig. 2]. These individual answers impacted the ‘satisfaction - extent of enjoyment of practice placement’ [see 5.1; Table 31] and contribute toward the group-participants negative perception results for domain one: ‘quality of the practice placement’ or “satisfaction with clinical placement” (Salamonson *et al.*, 2011, p. 2671) [see 5.1.2; Table 34].

The higher the score (i.e. Likert-scores of four and five) for the nine reverse Likert-scale score (Likert, 1932) questions (#s 2(2), 5(9), 8(16), 11(21), 12(25), 13(27), 14(31), 17(37), 18(38)) then the more positive the individual students’ perception was (Merleau-Ponty, *in* Cobb *translation by* Edie 1964) [see 4.2.1; Table 25]. These questions are shown in green [see Tables 32 and 33].

For example in the question ‘my mentor often got side-tracked and did not stick to the main points’ (Salamonson *et al.*’s (2011) question number eight and Chan’s question number 16 (2001)) there were three of my individual participants out of $n=64$ who strongly disagreed that their ‘mentor often got side-tracked and did not stick to the main points’ who scored five each on the reverse Likert-scale score (Likert, 1932)

thus each participant numbered; 18, 44 and 55 showed a positive perception toward answering this question [see Table 33].

In other words three of my individual participants perceived that they felt strongly that their 'mentor [did not] often [get] side-tracked and [did] stick to the main points'. In contrast there were 30 of my individual participants out of $n=64$ who perceived strong agreement that 'my mentor often [did get] side-tracked and did not stick to the main points' with each participant scoring one on the reverse Likert-scale score (Likert, 1932) [see 4.2.1; Table 25]. Thus each individual participant numbered; 2, 3, 4, 5, 9, 10, 12, 13, 15, 16, 19, 21, 22, 24, 27, 29, 32, 37, 39, 41, 42, 43, 46, 49, 53, 57, 60, 61, 62 and 64 showed a negative perception toward answering this question. In other words 30 of my participants perceived that they strongly agreed that 'my mentor often got side-tracked and did not stick to the main points' [see 4.2.2; Fig. 2]. These individual answers impacted the 'task orientation - extent to which placement activities are made clear and well organised' [see 5.1; Table 31] and contribute toward the group-participants negative perception results for domain two: 'mentor support' or "clinical facilitator support of learning" (Salamonson *et al.*, 2011, p. 2671) [see 5.1.2; Table 35].

5.1.2 Resulting quantitative sample-groups perceptions

Using Fig.'s 2 and 3 [see 4.2.2] I summarised my descriptive statistical analysis (Roy, Acharya and Roy, 2016) of my group-participants' perceptions (Merleau-Ponty, *in Cobb translation by Edie 1964*) of my e-survey (Knowles, 2010a) [see 3.5.1]. Here my results are shown as positive and negative group-participant totals for perceptions of mentor support [see Table 34] and perceptions of the quality of practice placements [see Table 35] using 64-to-320 or minus 160 to plus 160 as the defining point of range in the data-set total scores.

Question# (Salamonson <i>et al.</i> , 2011) with Chan's question# (2001) in brackets							
	3 (3)	5 (9)	7 (15)	11 (21)	13 (27)	15 (33)	19 (39)
Total Likert scores	195	138	145	206	279	133	251
+ive or -ive result	+ive	-ive	-ive	+ive	+ive	-ive	+ive
Minimum scores possible for each question 1 x 64 = 64 Negative perception range -ive = ≥64 -to- ≤160				Maximum scores possible for each question 5 x 64 = 320 Positive perception range +ive = ≥160 -to- ≤320			

Table 34 - n=64 positive and negative perceptions on the quality of practice placements

Question# (Salamonson <i>et al.</i> , 2011) with Chan's question# (2001) in brackets												
	1 (1)	2 (2)	4 (7)	6 (13)	8 (16)	9 (17)	10 (19)	12 (25)	14 (31)	16 (35)	17 (37)	18 (38)
Total Likert scores	137	153	143	139	125	103	126	131	259	135	132	146
+ive or -ive result	-ive	-ive	-ive	-ive	-ive	-ive	-ive	-ive	+ive	-ive	-ive	-ive
Minimum scores possible for each question 1 x 64 = 64 Negative perception range -ive = ≥64 -to- ≤160						Maximum scores possible for each question 5 x 64 = 320 Positive perception range +ive = ≥160 -to- ≤320						

Table 35 - n=64 positive and negative perceptions of mentor support

I correlated the numeri's of my group-participants perception [see 4.2.2 Fig. 2] with the language of Chan's questions (2001) used in my e-survey (Knowles, 2010a) [see 3.2.1.2; Table 13] along with the positives and negative perception rating shown in Tables 34 and 35. Resultantly my participants' perception on the quality of practice placements (Chan, 2001) is shown in pink and my participants' perceptions of mentor

support (Chan, 1999) is shown in orange as per Salamonson *et al.*'s (2011) survey instrument [see Table 36].

Question# with Chans original question# in brackets (Chan, 2001)			Positive/Negative
Domain one: Quality of the practice placement or "satisfaction with clinical placement" (Salamonson <i>et al.</i> , 2011, p. 2671)	3(3)	I looked forward to going to my shifts on practice placement	+ive
	5(9)	I was dissatisfied with what was done on practice placement	-ive
	7(15)	At the end of my shift on practice placement I had a sense of job satisfaction	-ive
	11(21)	My practice placement was a waste of time	+ive
	13(27)	My practice placement was boring	+ive
	15(33)	I enjoyed going to my practice placement	-ive
	19(39)	My practice placement was interesting	+ive
Domain two: Mentor support or "clinical facilitator support of learning" (Salamonson <i>et al.</i> , 2011, p. 2671)	1(1)	My mentor usually considered my feelings	-ive
	2(2)	My mentor talked rather than listened to me	-ive
	4(7)	My mentor talked to me like an individual	-ive
	6(13)	My mentor tried hard to help me	-ive
	8(16)	My mentor often got side-tracked and did not stick to the main points	-ive
	9(17)	My mentor thought up innovative learning ideas for me	-ive
	10(19)	My mentor helped me whenever I had trouble with my work	-ive
	12(25)	My mentor seldom spoke to me	-ive
	14(31)	My mentor was not interested in my problems	+ive
	16(35)	My mentor often planned interesting activities for me	-ive
	17(37)	My mentor was unfriendly and inconsiderate towards me	-ive
	18(38)	My mentor dominated our debriefing/ reflective discussions	-ive

Table 36 - conversion of numeri's into language with +ive and -ive correlating perception

I used my tabulated information [see Table 36] to present domain one of my participants perceptions on the quality of practice placements and domain two on my participants' perceptions of mentor support as per Salamonson *et al.*'s (2011) survey instrument. To present my e-survey (Knowles, 2010a) results with clarity I have reworded Chan's questions (Chan, 2001) that I used in my e-survey (Knowles, 2010a) [see 3.2.1.2; Table 13] into the corresponding positive and negative results of my participants' perceptions of their practice placements [see Table 37].

Domain one: Quality of the practice placement or “satisfaction with clinical placement” (Salamonson <i>et al.</i>, 2011, p. 2671)	I looked forward to going to my shifts on practice placement
	I was dissatisfied with what was done on practice placement
	At the end of my shift on practice placement I did not have a sense of job satisfaction
	I did not find my practice placement a waste of time
	My practice placement was not boring
	I did not enjoy going to my practice placement
	My practice placement was interesting
Domain two: Mentor support or “clinical facilitator support of learning” (Salamonson <i>et al.</i>, 2011, p. 2671)	My mentor usually did not consider my feelings
	My mentor talked rather than listened to me
	My mentor did not talk to me like an individual
	My mentor did not try hard to help me
	My mentor often got side-tracked and did not stick to the main points
	My mentor did not think up innovative learning ideas for me
	My mentor did not help me whenever I had trouble with my work
	My mentor seldom spoke to me
	My mentor was interested in my problems
	My mentor did not plan interesting activities for me
	My mentor was unfriendly and inconsiderate towards me
	My mentor dominated our debriefing/ reflective discussions

Table 37 - my participants' perceptions of their practice placements

The descriptive statistical results I computed [see 4.2.2] suggest that my participants perceive that their mentors did not consider their feelings; talked at them rather than listened to them; did not try hard to help them; often got side-tracked and did not stick to the main points; did not think up innovative learning ideas; did not help whenever they had trouble; seldom spoke to them; did not plan interesting activities for them; were unfriendly and inconsiderate and dominated reflective/ debriefing sessions. Furthermore my descriptive statistical results suggest that my participants perceive a dissatisfaction with what was done on placement and the quality of practice placements did not give them a sense of job satisfaction by the end of their shift and they did not enjoy going to placements.

The positive perceptions on the quality of the clinical learning environments were that my participants did not find their practice placements a waste of time and these were not boring but instead were interesting and mentors were interested in their problems [see Table 37]. I compare and contrast my e-survey (Knowles, 2010a) results with fellow researchers' results in section 5.1.2.1.

I used quantitative methods of interpretation of my summarised data to make my general estimations and predictions [see 4.2.2]. This was to generalise my research results from my sample data to my whole population of $N=126$ student nurses with dyslexia [see 3.4.2; Table 17 (LSBU, 2007/8)]. It was not expected to be accurate estimations/ predictions about practice placement perceptions (Merleau-Ponty, *in* Cobb *translation by* Edie 1964). Estimations were required as 62 student nurses in my population chose to not participate in my study [see 3.5.1]. The collective perceptions of these people were missing from my research results.

As my sample size of $n=64$ fell between 50 - 1 00 it should ensure that my results were sufficiently reliable for statistical inferences to my population (NAO, 2001). These inferences had an attached margin of error [see 4.2.2; Fig. 4] meaning that there were possible differences

between my sample estimate and the actual population value. Therefore I did not expect the estimates taken from my sample to be exact. The low variability in the range of values or opinions in my Likert-scale 1 - 5 (Likert, 1932) [see 4.2.2; Fig. 3] shown in my standard deviations made my estimate more accurate. My high confidence levels [see 4.2.2; Fig. 4] shows likelihood that my results from my sample hold forceful conclusions toward certainty of associated precision that they lie within the associated population precision.

The normal curves of distribution suggests that my sample of $n=64$ students with dyslexia may have come from the full target population of $N=126$ students or from the whole UK population of student nurses with dyslexia. I hoped to predict from my sample of $n=64$ participants results, by making statistical inferences, to suggest how the other 62 student nurses in my population with dyslexia might perceive practice placements. I speculated that my results have application to explain the perception of practice placements for the whole population of $N=126$ student nurses with dyslexia (Merleau-Ponty, *in* Cobb *translation by* Edie 1964).

5.1.2.1 Discussion of my results within fellow researchers' results

In preparation for my research proposal, ethics application and request to register my research degree. I searched the literature in 2009-2010 to find the research that had already been undertaken using Chan's survey instrument (2000 and 2001) [see 2.2]. My search had revealed eight studies within 18 published articles that had used Chan's questions (2000; 2001) for data collection [see 2.2.1]. Research on my phenomenon from a sample-group of people who held the shared characteristic category of being pre-registration student nurses with a positive dyslexia diagnosis [see 1.3] had not been undertaken and I proceeded with my research proposal [see 2.2.3]. In 2011 when I had applied for full ethical approval for my study and to register my research degree at LSBU, I had repeated my literature review [see 2.2.1] and I found a new study by Salamonson *et al.* (2011) where a 19 question abbreviated version of Chan's 84 question survey instrument (Chan, 2001) had been developed.

Salamonson *et al.*'s. (2011) abbreviated survey instrument selected the two full descriptor question-sets of 'personalisation' and 'satisfaction' from Chan's instrument along with two questions from 'student involvement' and one question each from 'task orientation' and 'innovation' (Chan, 2001) [see Table 31]. I examined the validity of their

abbreviated 19 question instrument as a tool for my own study (Patrick, Guyatt and Acquandro *in* Higgins and Green, 2011). I chose to use Salamonson *et al's*. (2011) method for data collection as the instrument design is rigorous (Given, 2015).

The content-validity rigour (Higgins and Green, 2011) of the abbreviated instrument was tested by way of examining the validity of the instrument for their own study (Salamonson *et al.*, 2011) [see 3.2.1.1]. I wanted to proceed to collect data with a tested survey tool (Jinks, 2007) as I believed that a valid instrument is key to research quality outcomes (Higgins and Green, 2011). As I wanted to measure student satisfaction with the practice placement environment and satisfaction with the mentor support for their learning I examined the 19 questions within Salamonson *et al's* (2011) abbreviated version and found it held the utmost face-validity as it actually “measures what [I] intended to measure” (Tavakol and Dennick, 2011, p. 53).

I used my fellow researchers' results from the collective nine studies that deployed Chan's questions (Chan, 2001) [see 2.0] to synthesise my own descriptive theory. I wanted to do this in a reasoned way where I would employ critical analysis skills to recognise comparable results and contrasting or contradictory results to aid my theorem description

(Knowles and McGloin, 2007; Knowles and Gray, 2011). However there is an imperfect knowledge base to reason from (Reed and Pease, 2017) and I think that this is mainly due to the following issues; My study sought to inform on NHS practice placement environments for UK universities, and to build on the existing knowledge base for these establishments but there is only one study using Chan's questions (Chan, 2001) with perceptions of NHS practice placements as only one of the studies had UK student nurse participants (Midgley, 2006) [see 2.2.1]. The rest were international studies comprising published results with five from Australia (Chan, 1999; Henderson *et al.*, 2006a; Newton, Billett and Ockerby, 2009; Smedley and Morey, 2009 and Salamonson *et al.*, 2011) and one each from participants in Hong Kong (Ip and Chan, 2005), Italy (Perli and Brugnonli) and Norway (Berntsen and Bjørk, 2010) [see 2.2.1 and 2.2.2]. Each of these countries pre-registration nursing education curricula will hold multi-variance and difference to UK BSc. (Hons.) nursing education. Also each of the three countries clinical settings, where practice placements are hosted will hold different cultural contexts of practice and will be variant loaded and full of difference from the UKs NHS, private, voluntary and independent sector practice placements in immeasurable variables [see 1.1].

A major issue on the imperfect knowledge base to reason from (Reed and Pease, 2017) is that there were no previous results published from researchers who have used Chan's questions (Chan, 2001) to report data on participants who were student nurses with dyslexia, as mine is the first global study to do this [see 2.2.3]. However, it would be wrong to assume that the other researchers' participants were all student nurses who did not have dyslexia. This is because approximately 7% of the UK population is identified as having dyslexia (Peterson and Pennington, 2012) and it is estimated that as much as 20% of the global population might have dyslexia (International Dyslexia Foundation, 2017). Meaning that my fellow researchers' nine research studies had participants who did have dyslexia amongst participants who did not have dyslexia.

The challenge was for me to use reason to seek helpful contradictory knowledge between my results and the results from the published nine studies (Reed and Pease, 2017). However, this challenge was further compounded by the content actually provided within the published research. As is expected my fellow researchers do not report on their raw datum sets and instead of reporting detailed analysis of their data and results, they more likely publish synthesis of their results as the highest or lowest scoring six scale descriptor categories of:

‘personalisation’; ‘student involvement’; ‘satisfaction’; ‘task orientation’; ‘innovation’ and ‘individualisation’ (Chan, 2001).

The only two complete scale descriptors that were covered in my abbreviated question (Salamonson *et al.*, 2011) set of results were domain one: ‘satisfaction’ meaning the extent of enjoyment of practice placement (Chan, 2001) and domain two: ‘personalisation’ meaning the emphasis on opportunities for individual student to interact with mentor and mentors concern for student’s personal welfare (Chan, 2000) [see 5.1; Table 31]. My fellow researchers’ results that reported on the other four scale descriptors ‘individualisation,’ ‘involvement,’ ‘task orientation’ and ‘innovation’ (Chan, 2000) as result sets were therefore outside the realms of my own study (Salamonson *et al.*, 2011). Added to this seven of the research studies report on the students ‘preferred’ practice placement environment as well as their ‘actual’ practice placement environment, where my study like Salamonson *et al.*’s study (2011) reports on only the students ‘actual’ perceptions of their practice placements.

A further problem is the large amount of missing data from the reporting studies. My fellow researchers have not all reported their results on ‘satisfaction’ along with ‘personalisation’ as total mean averages and

standard deviations (Chan, 2001) thus threatening the scope for my comparable discussion and my contrasting descriptive theory development. Therefore the capacity to compare my research results with my fellow researchers' results in the nine studies published between 1999-2011 is full of limitations.

However, I am able to categorically state that my results show that 'personalisation' or mentor support or "clinical facilitator support of learning" (Salamonson *et al.*, 2011, p. 2671) was perceived by my students with dyslexia as poor in practice placements with a negatively skewed average mean of 26.96 (12 questions in domain) or singular question mean of 2.24 with a standard deviation of 1.2 for my $n=64$ participants [see 4.2.2; Fig.'s 3 and 4].

I am able to compute and measure this result with just one third of the total studies as these researchers are the only ones who provide any numeri in their publications. Chan's research and his highest 'actual' ranking with a total mean of 27.72 and standard deviation of 4.38 (over just seven questions in descriptor) with a singular question mean of 3.96 was for the students perception of 'personalisation' (Chan, 1999) [see 2.2.3]. This means that the $n=138$ students in Chan's study perceived positive mentor support with emphasis on opportunities for individual

student to interact with mentor and mentors had concern for the student's personal welfare within their practice placements (Chan, 2000). 'Personalisation' also scored the highest total mean in Ip and Chans' research (2005) [see 2.2.2] at 24.17 with a standard deviation of 4.46 and a singular question mean of 3.45. Berntsen and Bjørk's (2010) $n=74$ students in nursing home practice placements rated their highest score to 'personalisation' with an average total mean of 26.28 and standard deviation of 3.97 with a singular question mean of 3.75.

Therefore I state that according to measurable research results Berntsen and Bjørk's (2010) students had the most positive experience on their practice placements, followed by Chan's (2000) students, then Ip and Chan's (2005) and lastly my students with dyslexia had the least positive experience of mentor support or "clinical facilitator support of learning" (Salamonson *et al.*, 2011, p. 2671).

I am able to analytically compare my results with some of my fellow researchers discourse on their results. Students in these studies all fair well and Midgley (2006) found that 'personalisation' and 'satisfaction' had the highest scores. They state that the most important scale descriptors for UK student nurses were their mentor support with good interaction between students and their mentors and that mentors were

concerned for their students' personal welfare and the quality of their practice placement in terms of the students actually enjoying it [see 2.2.3]. 'Personalisation' was equally one of the most important perceptions ranked by the students in the study by Smedley and Morey (2009) [see 2.2.2].

Henderson *et al.*'s (2006a) students on their new 'clinically orientated' program of study were more satisfied than students on their 'traditional' program of pre-registration nursing education [see 2.2.2]. In Perli and Brugnonli's study the highest score was given by their students to 'satisfaction' meaning that they perceived that the quality of their practice placement was of utmost importance to them (Perli and Brugnonli, 2009) [see 2.2.3].

Four of the publications I had sourced did not report any results of their participants' perspectives as they were validation studies of the research instrument itself. Therefore Henderson *et al.* (2006b) did not report their results on the student nurses' survey data within this publication [see 2.2.2]. Likewise Newton, Billett and Ockerby (2009) did not report any data results from Chan's (2001) questions in either their 2009 or 2010 publications (Newton, Billett and Ockerby, 2009; 2010) [see 2.2.2].

Salamonson *et al.*'s (2011) publication also focuses on testing the

statistical validity and reliability of the adapted survey instrument and the survey data and results themselves are not included within their publication [see 2.2.2].

In my study results ‘satisfaction’ or quality of the practice placement or “satisfaction with clinical placement” (Salamonson *et al.*, 2011, p. 2671) was relatively poorly perceived by my students with dyslexia. My study resulted with an average total mean of 21.0 and a standard deviation of 1.26 with a singular question mean of 1.75 [see 4.2.2; Fig.’s 3 and 4].

Chan did not measure ‘satisfaction’ until his study with Ip in 2005 (Ip and Chan, 2005) these researchers found the mean to be 23.07 and a standard deviation of 4.50 with a single question mean of 3.38. For Berntsen and Bjørk’s (2010) $n=74$ students in nursing home practice placements the third highest score was for ‘satisfaction’ with a total mean of 24.58 and a standard deviation of 6.01 with a singular question mean of 3.51).

Therefore I state that according to research results Berntsen and Bjørk’s (2010) students had the most positive experience on their practice placements, followed by Ip and Chan’s (2005) students and lastly my students with dyslexia had the least positive experience of ‘satisfaction’

or quality of the practice placement or “satisfaction with clinical placement” (Salamonson *et al.*, 2011, p. 2671).

Within the collective results reported in the multiple publications by Chan (1999; 2000; 2001; 2002a; 2002b; 2003 and 2004), Ip and Chan (2005 and 2007), Henderson *et al.* (2006a), Midgley, (2006), Smedley and Morey (2009), Perli and Brugnolli (2009) and Berntsen and Bjørk (2010) the mentorship of student nurses primarily focused on ‘personalisation.’ Therefore the emphasis on opportunities for individual students to interact with their mentor and mentors concern for student’s personal welfare (Chan, 2000) was perceived to be very good by students. This was closely followed with high student ‘satisfaction’ within their practice learning environment meaning that overall the students in these studies enjoyed their practice placements (Chan, 2001) [see 2.2.3].

By the time I wrote my thesis considerable time had passed since my 2011 search for literature from researchers who had used Chan’s questions (2001) for their data collection. I therefore repeated my literature search following the same steps [see 2.2.1] the only change being that my era of interest was 2011-2017. I re-searched as I wanted to know if there were any further studies published after my original search that had been during the time of my research proposal and

approval. I did this to further develop the synthesis of my own descriptive theory.

I sourced a total of 13 new studies that had used Chan's questions (2001) and as none of them had sampled student nurses who held the shared characteristic of dyslexia, my study is original and new as it is the first. The 13 studies comprise two from the USA (Lovecchio, DiMatteo and Hudacek, 2012; Hardy *et al.*, 2015), one from the UK (Murphy *et al.*, 2012) and one from Iran (Rahmani *et al.*, 2011), five from Australia (Brown *et al.*, 2011; Newton *et al.*, 2012; Williams, Brown and Winship, 2012; McInnes *et al.*, 2015 and Salamonson *et al.*, 2015), one from Greece (Papathanasiou, Tsaras and Sarafis, 2014), one from Norway (Bjørk *et al.*, 2014), one from Saudi Arabia (Gameel. Ali, Aly EL Banan and Al Seraty, 2015) and one from Egypt (EL Mokadem and EL-Sayed Ibraheem, 2017). This range of recent publications shows that Chan's questions (Chan, 2001) had become an international cross-cultural instrument of choice for measuring student perceptions on their practice placements.

In total I excluded five of these 13 studies from my discussion for the following reasons; the study by Brown *et al.* (2011) was research on multi-professional health science students' clinical fieldwork and

excluded student nurse participants. Likewise Williams, Brown and Winship (2012) was only a study on paramedic students. Newton *et al.* (2012) used Newton, Billett and Ockerby's (2009; 2010) adapted version of Chan (2001) and the rearranged factors no longer bore a comparable resemblance to the original 'satisfaction' and 'personalisation' domains that I had focused on in my study (Salamonson *et al.*, 2011).

Furthermore Hardy *et al.* (2015) had also used Newton, Billett and Ockerby (2009; 2010). I also excluded Salamonson *et al.*'s (2015) publication as it was more validation data from their Salamonson *et al.* (2011) publication without any raw data sets or reporting participant-group results that could be compared and contrasted with my own results.

Overall I welcomed the evident move toward my eight fellow researchers reporting extracts of their research data results in their publication.

Within these publications I found this enabled further numeric comparison and contrast with my own results that I had not been able to achieve with the majority of study publications that I had originally sourced [see Table 38].

Researchers in chronological order of publication dates:	Satisfaction (Chan, 2001): total mean average (\bar{x}) and standard deviation (s)		Personalisation (Chan, 2001): total mean average (\bar{x}) and standard deviation (s)	
Chan (1999)	\bar{x} = **** s = ****		\bar{x} = 27.72 (3.96)* s = 4.38	
Ip and Chan (2005)*	\bar{x} = 23.07 (3.38) s = 4.50		\bar{x} = 24.17 (3.45) s = 4.46	
Berntsen and Bjørk (2010)*	\bar{x} = 24.58 (3.51) s = 6.01		\bar{x} = 26.28 (3.75) s = 3.97	
Rahmani <i>et al.</i> (2011)*	\bar{x} = 22.5 (3.21) s = 2.4		\bar{x} = 13.9 (1.98) s = 4.3	
Lovecchio, DiMatteo and Hudacek (2012)* Quasi-experimental comparing a traditional and experimental course	Traditional: \bar{x} = 25.36 (3.62) s = 3.97	Experimental: \bar{x} = 29.23 (4.17) s = 3.28	Traditional: \bar{x} = 30.14 (4.30) s = 3.32	Experimental: \bar{x} = 30.78 (4.39) s = 3.81
Murphy <i>et al.</i> (2012)* and **	\bar{x} = 23.52 (3.36)** and ***** s = 0.57**		\bar{x} = 22.12 (3.16)** and ***** s = 0.44**	
Bjørk <i>et al.</i> (2014)*	\bar{x} = 26.85 (3.83) s = 0.49		\bar{x} = 26.26 (3.75) s = 0.31	
Papathanasiou, Tsaras and Sarafis (2014)*	\bar{x} = 21.81 (3.11) s = 5.21		\bar{x} = 23.97 (3.42) s = 4.66	
Gameel. Ali, Aly EL Banan and Al Seraty (2015)*	\bar{x} = 29.6 (4.22) s = 5.7		\bar{x} = 28.2 (4.02) s = 3.5	
McInnes <i>et al.</i> (2015)***	\bar{x} = 30.24 (4.32) s = 6.18		\bar{x} = 49.64 (4.13)*** s = 7.23	
EL Mokadem and EL-Sayed Ibraheem (2017)*	\bar{x} = 23.68 (3.38) s = 9.98		\bar{x} = 21.58 (3.08) s = 7.91	
Mean average (\bar{x}) ranges and (s) for all of the above studies:	Lowest (\bar{x}) 21.81 (3.11) (s) 5.21 Highest (\bar{x}) 30.24 (4.32) (s) 6.18		Lowest (\bar{x}) 13.9 (1.98) (s) 4.3 Highest (\bar{x}) 49.64 (4.13) (s) 7.23	
Total (\bar{x}) and (s) for all of the above studies:	(\bar{x}) 25.69 (3.67) (s) 4.77*****		(\bar{x}) 27.51 (3.93) (s) 4.35*****	
Knowles (2017)*** Sampling student nurses with dyslexia	\bar{x} = 21.00 (3.00)***** s = 1.26		\bar{x} = 26.96 (2.24)***** s = 1.20	

*Using Chan (2001) survey instrument

**4-point Likert-scale measurement = numeric highest scores in reporting data were 4 instead of 5 ∴ results are > $\Sigma \bar{x}$ shown

***Using Salamonson *et al.* (2011) survey instrument

****Satisfaction was not added as a scale until 2001 (Chan, 2001) and the first published result is Ip and Chan (2005)

*****Excluding Murphy *et al.* (2012)**

*****3/7 negative skews [see 5.1.2; Table 34]

*****11/12 negative skews [see 5.1.2; Table 35]

Table 38 - summary of researchers' results using Chan's (2001) questions

The eight international studies were cross-sectional in design (Edmonds and Kennedy, 2016) using Chan's questions (2001) with nursing student participants. Overall there had been an important international effort to measure student nurse perspectives of practice placements that I discuss within my own study's findings. The studies were conducted in eight different countries and participant numbers ranged from $n=45$ -to- $n=440$ and covered practice placements in the acute and community settings [see Table 39].

Researchers in chronological order by publication date:	Method using Chan's questions (Chan, 2001) to collect data on student nurse perception:	Satisfaction (Chan, 2001): Question mean average (\bar{x})	Personalisation (Chan, 2001): Question mean average (\bar{x})
Rahmani <i>et al.</i> (2011)	$n=133$ in Iran*	$\bar{x} = 3.21$	$\bar{x} = 1.98$
Lovecchio, DiMatteo and Hudacek (2012)	$n=14$ on a traditional programme at a community hospital	$\bar{x} = 3.62$	$\bar{x} = 4.30$
	$n=40$ quasi-experimental programme same hospital Total study participants $n=54$ in USA*	$\bar{x} = 4.17$	$\bar{x} = 4.39$
Murphy <i>et al.</i> (2012)	$n=440$ in UK* and **	$\bar{x} = 3.36^{**}$	$\bar{x} = 3.16^{**}$
Bjørk <i>et al.</i> (2014)	$n=184$ 3 rd years; Norway; mental health care nursing homes & home care*	$\bar{x} = 3.83$	$\bar{x} = 3.75$
Papathanasiou, Tsaras and Sarafis (2014)	$n=196$ in Greece*	$\bar{x} = 3.11$	$\bar{x} = 3.42$
Gameel, Ali, Aly EL Banan and Al Seraty (2015)	$n=75$ in Saudi Arabia*	$\bar{x} = 4.22$	$\bar{x} = 4.02$
McInnes <i>et al.</i> (2015)	$n=45$ primary care in Australia***	$\bar{x} = 4.32$	$\bar{x} = 4.13$
EL Mokadem and EL-Sayed Ibraheem (2017)	$n=400$ in Egypt*	$\bar{x} = 3.38$	$\bar{x} = 3.08$
Knowles (2017)	$n=64$ in UK***	$\bar{x} = 3.00$	$\bar{x} = 2.24$
4-point Likert-scale (Likert, 1932) comparison of two UK studies:			
Murphy <i>et al.</i> (2012)	UK*	Total $\bar{x} = 23.52^{**}$ & ***** $\bar{x} 3.36$ range 3.30 - 3.41	Total $\bar{x} = 22.12^{**}$ & ***** $\bar{x} 3.16$ range 1.14 - 3.66
Knowles (2017)	UK*** and ****	Total $\bar{x} = 17.48$ $\bar{x} 2.49$ range 1.84 - 3.43	Total $\bar{x} = 14.56^{*}$ & ***** $\bar{x} 2.08$ range 1.76 - 3.23
*Using Chan (2001) survey instrument **4-point Likert-scale measurement = numeric highest scores in reporting data were 4 instead of 5 \therefore results are $> \Sigma \bar{x}$ shown ***Using Salamonson <i>et al.</i> (2011) survey instrument ****Results converted to 4-point Likert-scale (Likert, 1932) to enable comparison with Murphy <i>et al.</i> (2012) UK study *****See Table 38 *****Total for 12 questions*** $\bar{x} = 23.85$ and extracting same 7 questions from Chan (2001)*			

Table 39 - summary of mean averages for 'satisfaction' and 'personalisation' in post 2011 studies using Chan's questions (2001)

The research results show that overall students have the most positive practice placements in Australia, Saudi Arabia, USA and Norway.

However, this is a gross presumption as each of these countries provides only one research result for comparison. Compared to all eight research study findings my research results show that students with dyslexia have the least 'satisfaction' or quality of the practice placement or "satisfaction with clinical placement" (Salamonson *et al.*, 2011, p. 2671) and the penultimate worst 'personalisation' or mentor support or "clinical facilitator support of learning" (Salamonson *et al.*, 2011, p. 2671).

To compare my study with the only other UK study (Murphy *et al.*, 2012) using Chan's questions (Chan, 2001) I undertook a conversion of my 5 point Likert-scale (Likert, 1932) scored results into the 4 point scale used by Murphy *et al.* (2012). This showed that my students with dyslexia had low 'satisfaction' on their clinical placements with an average total mean of 17.48 or 2.49 per question with a skew toward dissatisfaction in three of the seven questions ranging between 1.84 - 3.23 per question. This contrasts to a much higher average total mean satisfaction of 23.52 or 3.36 per question. This shows a highly positive perception of students ranging between 3.30 - 3.41 per question as the maximum possible in a four-point Likert scale (Likert, 1932) is 4.00 (Murphy *et al.*, 2012) [see Table 39].

My students with dyslexia had comparably less support from mentors in terms of 'personalisation' than with Murphy *et al.*'s (2012) student results as these showed a positive perception with a total mean average of 22.12 equivalent to 3.16 per question within a range of 1.14 - 3.66. Students with dyslexia in my study rated mentor support negatively with a total average mean of 14.56 or 2.08 per question with a range between 1.76 - 3.23. Within this domain of mentor support or "clinical facilitator support of learning" (Salamonson *et al.*, 2011, p. 2671) there

were four out of seven negative skews. However, my participants positive perceptions were that $n=59$ or 92.1% did not think that their practice placements were boring and $n=52$ or 81.25% perceived that their mentors were interested in their problems. The third positive was that $n=52$ or 81.25% of my students with dyslexia perceived that their practice placements were interesting. McInnes *et al.*'s (2015) results also showed that $n=41$ or 91.1% of their students also found their practice placement interesting.

To claim the negative skews in my study compared to Murphy *et al.*'s (2012) study as a fact that is only due to the phenomenon of 'dyslexia' and not due to other multivariate factors would not be not proficient reporting of my research results (Benner, 2001). More UK studies on students with and without dyslexia would be necessary to prove or disprove the hypothesis that students with dyslexia are less satisfied on their practice placements and that they receive less support from their mentors (Gerrish and Lathlean, 2015). These studies would advisably each use Chan's questions employing Salamonson *et al.*'s (2011) research instrument so that their results are directly comparable with as many existing results as possible.

However, further discursive comparisons can be made between my research group-participants with dyslexia and other researchers' results from their studies using Chan's questions (2001). Murphy *et al.*'s (2012) results showed that overall, student satisfaction achieved the highest mean score and their students were less satisfied with placements that did not make them feel welcomed (Murphy *et al.*, 2012). My students with dyslexia were not made to feel welcome with $n=49$ or 76.5% perceiving that their mentors seldom spoke to them. Mentors were also unfriendly and inconsiderate according to $n=51$ or 79.6% of students with dyslexia.

McInnes *et al.* (2015) reported high mentor support of learning with an average mean of 49.64 and standard deviation of 7.23 and they stated that their students highly valued the mentor-student interpersonal relation. Papathanasiou, Tsaras and Safaris' (2014) students also evaluated positively the dimension of personalisation considering mentor-student interpersonal relations as a top priority in practice placements. My students with dyslexia did not perceive that they had good interpersonal communication with mentors as their mentors talked at them rather than listened to them $n=47$ or 73.4%. My students responded that their mentors often got side-tracked and did not stick to the main points $n=52$ or 81.25%. The mentors also dominated reflective/

debriefing session discussions $n=45$ or 70.31%. These collective negative perceptions of poor quality psychosocial interactive mentor-student relations impact learning (Dewey, 1938).

McInnes *et al.* (2015) report students as largely satisfied about the quality of practice placements and $n=40$ or 88% of their participants perceived a sense of satisfaction following their shift. My students with dyslexia perceived that practice placements did not give them a sense of job satisfaction by the end of their shift and only $n=18$ or 28.12% perceive any satisfaction. Gameel. Ali, Aly EL Banan and Al Seraty (2015) reported that their students were most satisfied that their mentor helped them whenever they had trouble with their work 93.4% and were equally very satisfied that their mentors tried hard to help them at 92%. Mentors helping students whenever they had trouble was EL Mokadem and EL-Sayed Ibraheems' (2017) highest ranking question at 91.4% and their students said that their mentor goes out of their way to help them at 91.2%. In contrast, my results showed that students with dyslexia perceived that their mentors did not help whenever they had trouble and only $n=13$ or 20.31% perceived that they did and neither did their mentors try hard to help them as only $n=14$ or 21.87% perceived that they did.

Gameel. Ali, Aly EL Banan and Al Seraty's (2015) third highest ranking by student perception was that their mentors usually considered their feelings 90.7%. This was equally EL Mokadem and EL-Sayed Ibraheem's (2017) third highest ranking at 87.2%. In contrast $n=51$ or 79.6% of my participants did not perceive that their mentors considered their feelings meaning that only $n=13$ or 20.3% perceived that they did.

The final available comparison is that in Gameel. Ali, Aly EL Banan and Al Seratys' (2015) study 90.7% of students looked forward to going to their shifts on practice placement. Whilst in EL Mokadem and EL-Sayed Ibraheems' (2017) study 85.8% did. In my study $n=49$ or 76.56% did not enjoy going to placements meaning that only $n=15$ or 23.43% students with dyslexia did look forward to going to their shifts on practice placement.

In contrast to my fellow researchers who also used Chan's questions (Chan, 2001) my own research results showed that my students with dyslexia perceived dissatisfaction about the quality of the clinical learning environment. They additionally perceived that their mentors did not think up innovative learning ideas $n=59$ or 92.18% and $n=50$ or 78.12% thought that mentors did not plan interesting activities for them. However, on the quality of the clinical learning environments my

participants' positive perceptions was that $n=37$ or 57.81% did not find their practice placements a waste of time [see 4.2.2; Fig. 3 - question 10(19); and 5.1.2; Table 37].

Homogeneity has emerged from all of my fellow researchers study metrics in that their results show their participants to rate 'satisfaction' and 'personalisation' positively highly within practice placements. Overall my research results showed my students with dyslexia were closest to the results of Egyptian and Iranian students [see Table 39] meaning that the perceptions my participants was similar to those of students whose practice placements are in the economies of the developing world (United Nations, 2014). The other lower ranking country that was nearest to my results was Greece where the economy is compromised by recession (Eurostat, 2017; BBC, 2017) [see Table 39]. It is therefore surprisingly disappointing that UK students with dyslexia on practice placements that are largely within the NHS and a stable healthcare economy (Eurostat, 2017) with one-to-one professional stage-two mentors (NMC, 2008) [see 1.1] hold such poor perceptions of their practice placement quality and support [see Table 39].

My results provide a preliminary understanding of the perspective of my phenomenon. The trend to rate so many items negatively is an indicator

that clinical learning environments and mentors are not invested in supporting the active engagement of student learning for those with dyslexia. This new knowledge enables improvement for the quality of practice placements for student nurses with dyslexia by targeting the areas known or perceived to weigh the heaviest against satisfaction as reported in my study. Likewise this new knowledge enables improvements in mentor support for student nurses with dyslexia and this is important for social justice [see 2.1.7.2]. The community of student nurses with dyslexia is at risk of attrition as good support from mentors is a key element in persuading students to stay on the BSc (Hons.) course (Cameron *et al.*, 2011) and a key reason cited for leaving BSc. (Hons.) pre-registration nursing coursework included the lack of support from practice placement mentors (Willis, 2015).

In both domains of ‘personalisation’ (Chan, 2000) or mentor support or “clinical facilitator support of learning” (Salamonson *et al.*, 2011, p. 2671) and ‘satisfaction’ (Chan, 2001) or quality of the practice placement or “satisfaction with clinical placement” (Salamonson *et al.*, 2011, p. 2671) my participants with dyslexia rated both areas as poor and requiring improvements. These problems lie with stage-two mentors (NMC, 2008) in all sectors of partnership practice placements and the 76 higher education institutions delivering NMC approved BSc (Hons) nursing

courses (NMC, 2016a). Educational policy for the development of practice placement support therefore needs to be tailored to ensure that it is inclusive of the needs of students with dyslexia [see 8.0] and that it is led and monitored by stage-four lecturer/practice educators from the university within their Link-Lecturer remit (Knowles, 2007; NMC, 2008) [see 1.1].

5.1.3 Triangulation: Resulting qualitative sample-groups perceptions

In preparing for the interpretative stage of my research process (Morse and Niehaus, 2016) I summarise the mixed-method intersection or triangulation (Andrew and Halcomb, 2009) [see 3.1] of my quantitative results ready to use these in conjunction with my qualitative findings (Hay, 2016). I present my qualitative participant groups quantitative results to generate an integrated perspective (Harvey and Land, 2016) [see Table 40]. In this chart my $n=8$ participants have been allocated their pseudonym [see 3.3.2].

Date stamp	Participant#	Excel row#	Interview#	Pseudonym	Question#(Salamonson <i>et al.</i> , 2011) with Chan's question#(2001) in brackets																		
					1 (1)	2 (2)	4 (7)	6 (13)	8 (16)	9 (17)	10 (19)	12 (25)	14 (31)	16 (35)	17 (37)	18 (38)	3 (3)	5 (9)	7 (15)	11 (21)	13 (27)	15 (33)	19 (39)
10.06.15	28	31	1	Adam	2	1	2	2	2	1	4	2	4	4	2	5	2	2	2	4	4	2	4
15.05.15	23	26	2	Beth	2	2	2	4	2	2	1	5	2	2	4	4	4	1	2	5	4	4	5
03.06.15	26	29	3	Cathy	4	4	1	1	2	2	1	1	4	1	1	2	5	1	1	5	5	1	4
21.07.15	37	40	4	Doris	1	1	1	1	1	1	1	1	5	1	1	1	1	5	1	2	5	1	2
30.06.15	29	32	5	Eva	2	2	1	2	1	1	2	2	4	1	1	1	2	2	2	4	4	2	4
09.07.15	31	34	6	Freda	2	1	1	1	2	2	2	2	5	2	2	2	4	2	4	1	2	2	5
21.07.15	32	35	7	Gill	1	2	2	2	1	1	2	1	5	1	2	2	1	1	2	2	5	2	5
03.12.15	52	55	8	Helen	1	1	4	2	4	2	2	1	4	2	2	1	5	1	1	1	5	1	4
Total Likert scores <i>n</i> =8					15	14	14	15	15	12	15	15	33	14	15	18	24	15	15	24	34	15	33
<i>n</i> =8 +ive or -ive result:					-ive	-ive	-ive	-ive	-ive	-ive	-ive	-ive	+ive	-ive	-ive	-ive	+ive	-ive	-ive	+ive	+ive	-ive	+ive
Full match to <i>n</i> =64					-ive	-ive	-ive	-ive	-ive	-ive	-ive	-ive	+ive	-ive	-ive	-ive	+ive	-ive	-ive	+ive	+ive	-ive	+ive
Minimum scores possible for each question 1 x 8 = 8 Negative perception range -ive = ≥8 -to- ≤20												Maximum scores possible for each question 5 x 8 = 40 Positive perception range +ive = ≥21 -to- ≤40											

Table 40 - qualitative sample-groups e-survey results

I assessed these results to see if the volunteers for interview held any opposite perspective from my whole $n=64$ participant group. I compared the overall Likert-scale scores (Likert, 1932) for each e-survey (Knowles, 2010a) question seeking the positive (+ive) and negative (-ive) datum results [see 5.1.2; Tables 34, 35 and 40] and I found these to be a match on all questions.

The five questions that are highlighted in grey [see Table 40] were not triangulated into my interviews [see 3.2.2]. This is because the responses from my participants were positive and the questions that were perceived negatively generated rich data. This is because my participants perceived negative perceptions of stage-two mentor support (NMC, 2008) and some negative perceptions of practice placement quality. It was these issues that my participants gave first-person typical

examples of experiences at interview (Matua and Van Der Wal, 2015) [see 5.2].

As some individual interview participants had a positive perception of some of my e-survey (Knowles, 2010a) questions I saved these questions until the end of interview to address if there was time. I have highlighted these positive Likert-scale scores of four and five (Likert, 1932) with a cross through the relevant cell [see Table 40]. For example in the question 'I was dissatisfied with what was done on practice placement' (Salamonson *et al.*'s. (2011) question number five and Chan's question number nine (2001)) Doris perceived strong disagreement that she was dissatisfied with what was done on practice placement (scoring five on the Likert-scale score (Likert, 1932)). Doris showed a positive perception toward answering this question. In other words Doris perceived strong agreement that she was not 'dissatisfied with what was done on [her] practice placement'. It was however productive to ask my interview participants Beth, Cathy, Gill and Helen who strongly agreed (scoring one each on the Likert-scale score (Likert, 1932)) and Adam, Eva and Freda who agreed (scoring two each on the Likert-scale score (Likert, 1932)) why they were 'dissatisfied with what was done on practice placement'. This is because these participants showed a negative perception toward answering this question. In other

words Adam, Beth, Cathy, Gill, Eva, Freda and Helen perceived a negative perception of practice placement quality in that they were not satisfied 'with what was done on practice placement' and at interview they were asked to provide data from their subjective experience through verbal first-person accounts (Langdridge and Hagger-Johnson, 2013).

The interface of my mixed methods was at my research narrative where my quantitative results were embellished by my qualitative findings. My ontology conceived the world of my phenomenon as including entities of two sorts of evidence. Firstly my descriptive statistical results from of my e-survey (Knowles, 2010a) data focused on the collective answers to each question item rating and scoring with resultant 'types' or 'universals' (Abbott, 2016). These types are, in principle, understood as repeatable features of reality (Kass, 2011). Secondly my interpretative phenomenological analysis of my interview data focused on person-centred 'particulars' or 'instances' (Smith and Ceusters, 2010). I partitioned these into sample-group findings or explanations (Thorne, 2016) on the basis of multiple similarity relations which I interpreted between them as superordinate themes (Braun and Clarke, 2013). These particulars are concrete individual entities that existed in space and time and existed only once (Smith and Ceusters, 2010).

I had kept individual participants viewpoints and constructs intact and analysed responses for meaning examining my sample-group data in totality (Wertz *et al.*, 2011). The process of recognising the collections of similar qualitative instances as findings and quantitative universal results was essential to form my cognition of understanding the nature of being student nurses with dyslexia within practice placements (Andrew and Halcomb, 2009; Plano Clark and Ivankova, 2015 and Hay, 2016) [see 5.2].

5.2 Findings: My qualitative synthesis and interpretative theory

Qualitative data arising from my interviews overwhelmingly resonated with my quantitative data from my e-survey (Knowles, 2010a). Verbal interview findings on my participants experience consistently supported and validated my participants' results on the two domains on my participants' perception (Salamonson *et al.*, 2011).

In order to illustrate my findings, I have selected quotations that were indicative of each set of superordinate and subordinate themes. These quotations were typical of the material in the transcriptions, but are only isolated examples rather than the complete records of my interviews. In

each case, the aim of the quotation is to illustrate the conception with what my participants actually said spoken in the primal sense of original voice (van Manen, 2016).

5.2.1 Diversity/homogeneity – social isolation

Diversity should be normative and fair within practice placements with stage-two mentors who are welcoming, helpful, kind and who ask their student about their diverse learning needs (NMC, 2008). The realities of practice placement found in my study are that student nurses with dyslexia experience social relations with their mentor that are geared toward homogeneity. This is unfair for the student with dyslexia as their stage-two mentors (NMC, 2008) don't ask about their individual learning needs and are therefore perceived by students to be unwelcoming, unhelpful and unkind toward them. Resultantly students feel alone or socially isolated and they perceive this to be because of the perceived or actual difference due to their dyslexia deficit. The phenomenon of social isolation formed of a diversity/homogeneity dichotomy found in my mixed-method study constitutes new knowledge that adds to the existing research knowledge on student nurses with dyslexia [see Table 41].

Datum-set: Adam	
Questionnaire results:-	Interview findings:-
Q. 2 (2) I strongly agree that my mentor talked at me rather than listened to me.	"...mentors do not sit me down to talk to me...No one wants...to try to help me with it"
Q. 4 (7) I disagree that my mentor talked to me like an individual.	"Seen as disability...a bit of a negative thing...They feel like you're not capable...maybe they thought that they got to babysit you a little bit or give you that much support"
Q. 9 (17) I strongly disagree that my mentor thought up innovative learning ideas for me.	"I don't think...people mean to do it...they don't understand"
Q. 15 (33) I disagree that I enjoyed going to my practice placement.	"It's difficult to explain...it's a bit overwhelming for me, and I can't always take it in...I think I've taken it a bit hard."
Q. 17 (37) I agree that my mentor was unfriendly and inconsiderate toward me.	"They think "Oh you just don't know and you do get it wrong, not capable""
Datum-set: Beth	
Questionnaire results:-	Interview findings:-
Q. 2 (2) I agree that my mentor talked at me rather than listened to me.	"She seemed surprised with me, with my very good knowledge...I worry, What's going on in the person's head...You don't know anything. You've got empty brain or something...everyone they think bad of me, really bad"
Q. 4 (7) I disagree that my mentor talked to me like an individual.	My mentor said it's not right for people who can't spell to try and be nurses...She looks at me, it gives me an impression she'd been thinking, "She can't spell even simple words"...She pulled a face and I felt bad, she hurt my feelings"
Q. 9 (17) I disagree that my mentor thought up innovative learning ideas for me.	"Some mentor...push you, "I've shown you so you do it". Then I'm thinking, but I've only been shown once they don't understand that I want to see it again and again to get it right"
Datum-set: Cathy	
Questionnaire results:-	Interview findings:-
Q. 4 (7) I strongly disagree that my mentor talked to me like an individual.	"...she used it as an excuse..."don't ask me I've got dyslexia"...it's an excuse for being slow, not able to achieve, not intelligent...this gives a negative impression of the whole thing. I was uncomfortable every time she say it"
Q. 9 (17) I disagree that my mentor thought up innovative learning ideas for me.	"She said "Why you want to write your notes you can't understand?...I need to look things up on my phone to help me with the notes...My mentor told me off for texting...chastised me and said I should not be having to do this"
Q. 15 (33) I strongly disagree that I enjoyed going to my practice placement.	"I'm in trouble, big trouble I tell you...being told off...She told me to put my phone away as it is not appropriate to use the phone on the ward"
Q. 17 (37) I strongly agree that my mentor was unfriendly and inconsiderate toward me.	"...sometimes they trap you in the deep end, expecting you to follow it straight away...she'd only say it quickly once and expect me to know. I did not find that helpful I found it inconsiderate"
Datum-set: Doris	
Questionnaire results:-	Interview findings:-
Q. 2 (2) I strongly agree that my mentor talked at me rather than listened to me.	"They've never actually asked if I need any help...they don't ask how I need this help and they do not try to help me"
Q. 4 (7) I strongly disagree that my mentor talked to me like an individual.	"...people automatically think that you got something wrong with your intelligence when you say dyslexia"
Q. 9 (17) I strongly disagree that my mentor thought up innovative learning ideas for me.	"...this is just the way we do it...I do struggle if things don't have rational for it"
Q. 15 (33) I strongly disagree that I enjoyed going to my practice placement.	"I have heard comments about me that I am lazy and sitting down at the computer. But I'm looking up...something I will have asked and nobody seems to know or there is conflicting information...It is quite the opposite of lazy"
Q. 17 (37) I strongly agree that my mentor was unfriendly and inconsiderate toward me.	"I have been ignored over...speaking up"
Datum-set: Eva	
Questionnaire results:-	Interview findings:-
Q. 2 (2) I agree that my mentor talked at me rather than listened to me.	"Some of the staff they do not talk with me...Sometimes I do wish that they would talk to me"
Q. 4 (7) I strongly disagree that my mentor talked to me like an individual.	"I overheard from the mentor...that people with dyslexia are so stupid they don't pass or they get low grades and this is why they act this way and score is low. She then said people with dyslexia shouldn't be allowed into nursing...people have that doubt...that you are not capable of being a nurse"
Q. 9 (17) I strongly disagree that my mentor thought up innovative learning ideas for me.	"...there could be better planning by the mentors on how to teach... complicated things as they don't seem to have any templates or good examples of how to do it. It is all a bit confusing...I always wish they might try to help me"
Q. 15 (33) I disagree that I enjoyed going to my practice placement.	"I am not happy to go to placement, I just couldn't face her... are you capable of being a nurse?...I'm stupid because I need more time...After that I didn't want to go into the placement"
Q. 17 (37) I strongly agree that my mentor was unfriendly and inconsiderate toward me.	"Oh that's wrong," she said "Oh, it's because you're dyslexic you weren't capable"...so they kind of left you behind"

Datum-set: Freda	
Questionnaire results:-	Interview findings:-
Q. 2 (2) I strongly agree that my mentor talked at me rather than listened to me.	"Have you got dyslexia? So, I told her, "Yes, I've got" But she didn't ask me what type I've got, or what problems I've got...there was nothing no interest, no help nothing...Nobody ask, if they ask I tell them, the spelling are a problem"
Q. 4 (7) I strongly disagree that my mentor talked to me like an individual.	"...they look at you like someone stupid...because they think they are more intelligent...they'll be thinking, "Why didn't your brain work? Why was your brain not able to function in the right way?...Immediate judgement is made "How can she be a nurse - she doesn't know anything! It's unfair"
Q. 9 (17) I disagree that my mentor thought up innovative learning ideas for me.	"Mentors all do things in their own order...should be Marsden Manual and in this definitive order, but mentors have their own way and this is confusing for me with dyslexia"
Q. 15 (33) I disagree that I enjoyed going to my practice placement.	"...the mentors are not patient...I go blank and freeze up...Yes this does spoil my enjoyment on placement"
Q. 17 (37) I agree that my mentor was unfriendly and inconsiderate toward me.	"As I'm writing the patient note I put my phone where nobody knew I was looking, all I see is if some spelling are correct...have a lot of problem with spelling. I was told to "Get off my phone and get on with my work". I don't defence as no point when they don't understand the problem"
Datum-set: Gill	
Questionnaire results:-	Interview findings:-
Q. 2 (2) I agree that my mentor talked at me rather than listened to me.	"...there are some mentors who are just not interested at all. These mentor they ignore their own student completely...they should find out if there are any main difficulties that we face during the placement"
Q. 4 (7) I disagree that my mentor talked to me like an individual.	"I didn't find any support or help, possibly they just whitewash you dyslexic...My spelling isn't good, it's terrible and mentors do this non-verbal communication amongst themselves. I feel like they are laughing at my spelling"
Q. 9 (17) I strongly disagree that my mentor thought up innovative learning ideas for me.	"Mentors don't consider what I might be feeling, they just say "Faster, you're too slow, you can't do things, or you don't listen." Yet, I do listen, I can't just absorb everything at once...when I'm starting out on a complex new skill with lots of specific steps...they could learn how to plan teaching and assessing activities conducive for student with dyslexia"
Q. 15 (33) I disagree that I enjoyed going to my practice placement.	"They're like, "Oh, hurry up"...I'm not given time to ask questions...things go a bit tense...They talked about another student like it's a disease...I try not to let this situation bother how I'm feeling, but it's hard"
Q. 17 (37) I agree that my mentor was unfriendly and inconsiderate toward me.	"Some of them, they don't want to know. If you say "dyslexia", they roll they eyes up, that is unkind behaviour and totally inconsiderate of the other persons feelings"
Datum-set: Helen	
Questionnaire results:-	Interview findings:-
Q. 2 (2) I strongly agree that my mentor talked at me rather than listened to me.	"I told the charge nurse, "I'm just letting you know I have dyslexia," I wanted to have that talk so I'd get some understanding and the help I need...and he was like, "That's not an excuse." I felt in a panic...He said, "It's not an excuse", he kept saying again and again "that's not an excuse...blah-blah-blah", and I said, "I'm not saying it is"
Q. 9 (17) I disagree that my mentor thought up innovative learning ideas for me.	"...straight away he shut me off, and there's no help, that's it. That's the first time someone's said it in that way, that's made me feel dyslexia really doesn't really mean anything. And so, I'm just going to have to deal with it on my own. It all makes me feel on my own"
Q. 15 (33) I strongly disagree that I enjoyed going to my practice placement.	"I felt a bit...pushed back a bit...I felt stupid, and it's one of the worst...I hate feeling stupid. I hate it, because I'm not stupid"
Q. 17 (37) I agree that my mentor was unfriendly and inconsiderate toward me.	"They're thinking, "Is this girl thick or what?" And I'm like, "I'm dyslexic, it takes me a couple of tries before I grasp it. Please, don't get frustrated with me"
Collective descriptive analysis:	Collective interview interpretative phenomenological analysis:
Q. 2 (2) 87.5% <i>n</i> =7 strongly agree/agree that my mentor talked at me rather than listened to me.	Superordinate theme; <ul style="list-style-type: none"> Social Isolation
Q. 4 (7) 87.5% <i>n</i> =7 strongly disagree/disagree that my mentor talked to me like an individual.	Subordinate themes: <ul style="list-style-type: none"> Diversity (should be normative and fair) Homogeneity (reality unfair treatment)
Q. 9 (17) 100% <i>n</i> =8 strongly disagree/disagree that my mentor thought up innovative learning ideas for me.	Please note that all of the participants' interview findings in Table 41 are precise extracts from their transcript as shown. They are intentionally being left as it was described in the original and every citation is presented <i>sic erat scriptum</i> . In view of this I have elected not to highlight each grammatical or usage mistake followed by [<i>sic</i>].
Q. 15 (33) 87.5% <i>n</i> =7 strongly disagree/disagree that I enjoyed going to my practice placement.	
Q. 17 (37) 87.5% <i>n</i> =7 strongly agree/agree that my mentor was unfriendly and inconsiderate toward me.	

Table 41 - findings on diversity/homogeneity and social isolation

5.2.1.1 Discussion - what did it feel like in practice placements?

To create a new understanding on my phenomenon I analysed and compared my findings with my fellow researchers' individual studies. I combined concepts from different sources of evidence with a focus on what students with dyslexia feel (Higgins and Green, 2011) [see 2.3.4]. My findings revealed that students with dyslexia felt that they had poor mentor-student social relations on their practice placements. This is critical as although Sanderson-Mann *et al.*'s (2012) research showed no evidence that student nurses with dyslexia have compromised competence, White (2007) found the development of clinical competence (NMC, 2010) depends on the student's individual needs and relationships with mentors. Select extracts from my findings on the lived-experience of being a student nurse with dyslexia on practice placements are used in this section to illustrate tensions between mentor-student relations:

Cathy: ...“she used it as an excuse...“don’t ask me I’ve got dyslexia”...it’s an excuse for being slow, not able to achieve, not intelligent...this gives a negative impression of the whole thing. I was uncomfortable every time she say it”

Doris: “I have been ignored over...speaking up”

Helen: ...“straight away he shut me off, and there’s no help, that’s it. That’s the first time someone’s said it in that way, that’s made me feel dyslexia really doesn’t really mean anything. And so, I’m just going to have to deal with it on my own. It all makes me feel on my own”

Within Ridley's (2011, p. 39) research findings a student stated “I felt I was irrelevant” expressing similar feelings to my own participant Helen.

This may be because other research in the field shows that “the disabled feel that their own needs are unimportant to the organization” (Dearnley *et al.*, 2010, p. 5). The NHS has “a culture that subordinated their needs [students with dyslexia]...to the organization”...and to [patients as] “users of their services” (Dearnley *et al.*, 2010, p. 4). In other words contrary to first aid practices when the rescuer puts their own health and safety before the casualties (Knowles and Whittaker, 2013) student nurses with dyslexia on practice placements become entrenched within an isolating healthcare culture of the patient comes first no matter what (NHS England, 2013).

Almost all of the students in my findings agreed/strongly agreed that their mentor was unfriendly and inconsiderate toward them. Students felt that their mentors were seemingly unkind toward them because of their dyslexia and this brings feelings of social isolation:

Adam: “They think “Oh you just don’t know and you do get it wrong, not capable””

Cathy: “I need to look things up on my phone to help me with the notes...My mentor told me off for texting...chastised me and said I should not be having to do this...I’m in trouble, big trouble I tell you...being told off...She told me to put my phone away as it is not appropriate to use the phone on the ward”

Freda: “As I’m writing the patient note I put my phone where nobody knew I was looking, all I see is if some spelling are correct...have a lot of problem with spelling. I was told to “Get off my phone and get on with my work”. I don’t defence as no point when they don’t understand the problem”

Gill: “My spelling isn’t good, it’s terrible and mentors do this non-verbal communication amongst themselves. I feel like they are laughing at my

spelling...Some of them, they don't want to know. If you say "dyslexia", they roll they eyes up, that is unkind behaviour and totally inconsiderate of the other persons feelings"

This unfriendly, inconsiderate and unkind actual behaviour by mentors (NMC, 2008), as perceived and experienced by the student nurses in my study is contrary to the values of the 6Cs (Cummings and Bennett, 2012) and the NMC (2015) code of conduct for the professional standards of practice and behaviour for nurses. It appears that unfriendly, inconsiderate and unkind behaviour is not monitored and regulated as part of the NMC mentorship strategies (NMC, 2008) or local NHS Employers (2017) diversity and inclusion frameworks. In their study Stanley *et al.* (2011) purport that mentors should welcome student nurses with dyslexia more as having this disability is not a barrier to becoming a good professional. They highlight the fact that these students should not have to prove that despite their disability they are competent as the practice placement assessment itself is rooted in competence (NMC, 2010).

The issues that Freda and Gill experienced with their spelling deficit is due to their phonological weakness (Beidas, Khateb, and Breznitz, 2013) they may also have difficulty in breaking words down into their component sounds (Henry, 2010). Spelling is effortful and difficult with a deficit in decoding speech sounds into writing (Pritchard *et al.*, 2016),

and without a spell check facility accessed via mobile phone technology it is a slow ‘trial and error’ task (Stenneken *et al.*, 2011). Poor spelling is characteristic of student nurses with dyslexia and difficulty with it was highlighted in studies in various practice placements (Crouch, 2008; Child and Langford, 2011; Ridley, 2011; Sanderson-Mann *et al.*, 2012). In White’s (2007) study it was specified that students faced problems with long unfamiliar or unusual words and this would likely apply to students who do not have dyslexia as well as those who do. However students with dyslexia do spontaneously tend to avoid the use of multi-syllable words over 6 letters long (Tops *et al.*, 2013a). I will discuss more on documentation later in this chapter [see 5.2.4.3].

Student nurses with dyslexia are “attuned to personal areas of difficulty” (Ridley, 2011, p. 37). This self-awareness allows for the development of compensatory strategies (Child and Langford, 2011) and although students work these out for themselves (Sanderson-Mann *et al.*, 2012) there are similarities within the self-taught solutions for dyslexia deficits. For example the “spell checks” that Freda undertook in my study were also employed by students in research by Child and Langford (2011, p. 44).

Poor spelling performance became disabling in my study findings for Cathy, Freda and Gill because of the adverse impact on their ability to carry out the every-day activity of documenting care (Great Britain. Equality Act, 2010) which involves the executive functions of reading, writing and spelling [see 2.1.6.1.1]. Students with dyslexia are aware of their “vulnerability” (Ridley, 2011, p. 42) as a minority group (NHS Choices, 2015a) when within practice placements and notably Freda tried to hide the work-related spell-check use of her mobile telephone.

Sadly strategies to disguise neurodiversity are adopted by NHS workers who are distinctly under the impression that it is their own “individual responsibility to adapt, cope or seek different employment...rather than the organisation they worked for changing its practices” (Dearnley *et al.*, 2010, p. 5). However the Equality Act (Great Britain. Equality Act, 2010) promotes and enables diversity in organisational workplaces and as the act is a social movement and theory for change it brings hope to student nurses with dyslexia. The use of enabling mobile telephone technology within practice placements is a reasonable adjustment and I will be examining these later in this chapter [see 5.2.3].

In my study the students felt that there was a tendency for mentors to be unwelcoming as they do not ask them about their dyslexia and

neurodiversity and how it individually affects them on practice placements.

Adam: "...mentors do not sit me down to talk to me...No one wants...to try to help me with it...It's difficult to explain...it's a bit overwhelming for me, and I can't always take it in

Eva: "Some of the staff they do not talk with me...Sometimes I do wish that they would talk to me"

Freda: "Mentors all do things in their own order...should be Marsden Manual and in this definitive order, but mentors have their own way and this is confusing for me with dyslexia"

In her research White found that one of the problems with dyslexia is that the "range and severity unique to the student requiring support to be tailored to the students individual need" (White, 2007, p. 41). In her study Ridley (2011, p. 41) echoed this being clear that support on practice placement for student nurses with dyslexia needs to be "tailored to individual needs." As there is a wide-variation in the type(s) and extent of difficulties experienced by each student nurse with dyslexia in their practice placement Sanderson-Mann *et al.* (2012) remind mentors that each student nurse with dyslexia is a case in point.

My literature review on the evidence-base of dyslexia deficit offers underpinning knowledge on why there is a wide-variation of dyslexia deficit manifestations or neurodiversity. Research shows that several deficits from anatomical encephalon difference cause the full clinical phenotype of dyslexia (Peterson and Pennington, 2012). Essentially

dyslexia is a complex multifactorial disorder because it can be peripheral reading impairments with deficits in orthographic-visual analysis or central with reading impairment in the later stages of the lexical and sub lexical routes (Bishop, 2015). Complexity comes from no single gene determining the neuromorphogenesis condition (Paracchini, 2011).

Dyslexia for some student nurses will mean a peripheral visual-spatial perception deficiency (Vidyasagar and Palmer, 2010). Others may have an auditory processing/ understanding disorder caused by phonological weakness (Roberts, Christo, and Shefelbine in Kamil *et al.*, 2011). This means a resultant spelling deficit for some student nurses like Freda and Gill because of their difficulties with auditory processing (Hämäläinen *et al.*, 2013) with saying then spelling words is nonsensical. Dyslexia symptoms may include an auditory processing speech verbal articulation disorder (Rayner *et al.*, 2012) as well. The behavioural symptoms for one or more of these deficits generates reading problems (Heim *et al.*, 2010b). I did not have neurodiversity knowledge prior to my EdD studies and it is likely that many mentors do not have this evidence-based knowledge either.

In my study student nurses with dyslexia mostly agreed/strongly agreed that their mentor talked at them rather than listened to them and they felt that mentors were not interested in their diverse learning needs

Freda: "Have you got dyslexia? So, I told her, "Yes, I've got" But she didn't ask me what type I've got, or what problems I've got...there was nothing no interest, no help nothing...Nobody ask"

Gill: "...there are some mentors who are just not interested at all. These mentor they ignore their own student completely...they should find out if there are any main difficulties that we face during the placement"

Helen: "They're thinking, "Is this girl thick or what?" And I'm like, "I'm dyslexic, it takes me a couple of tries before I grasp it. Please, don't get frustrated with me"

Similarly to Helen's line of thought a student nurse in Ridley's (2011) study had been described as 'thick' and discrimination will be examined in 5.2.2. In practice placements diversity should be the norm as a diverse pedagogy for student's with dyslexia deficits is a fair pedagogy. Therefore practice placements should anticipate the generic needs of student nurses with dyslexia (Walker *et al.*, 2013). This may be in the form of repetition for learning nursing skills as needed by Beth and Cathy in my study, as well as patience with the student processing this learning and this was not experienced by Gill:

Beth: "Some mentor...push you, "I've shown you so you do it". Then I'm thinking, but I've only been shown once they don't understand that I want to see it again and again to get it right"

Cathy: "...sometimes they trap you in the deep end, expecting you to follow it straight away...she'd only say it quickly once and expect me to know. I did not find that helpful I found it inconsiderate"

Gill: "Mentors don't consider what I might be feeling, they just say "Faster, you're too slow, you can't do things, or you don't listen." Yet, I do listen, I can't

just absorb everything at once...when I'm starting out on a complex new skill with lots of specific steps...they could learn how to plan teaching and assessing activities conducive for student with dyslexia”

In her study (Crouch, 2008, p.33) found that students with dyslexia felt that they were “slow at doing things” and a student mentor in Black, Baillie and Kane’s (2011) study identified mentors as being “impatient.” Ridley (2011) found that student nurses feel disempowered in practice placements by their mentors derogatory comments about their dyslexia deficit [see 5.2.2].

Students with dyslexia each have certain ways of learning and mentors who engage with this will be creative in adaptive pedagogy to meet the diverse students learning needs. However there exists a mentoring skills deficit as all of the students with dyslexia interviewed in my study disagreed/strongly disagreed that their mentors thought up innovative learning ideas for them and this is exemplified by Doris and Eva in their comments:

Doris: ...“this is just the way we do it...I do struggle if things don’t have rationale for it”

Eva: ...“there could be better planning by the mentors on how to teach... complicated things as they don’t seem to have any templates or good examples of how to do it. It is all a bit confusing...I always wish they might try to help me”

Noting Doris’s comment on rationale for nursing actions, Wray *et al.* (2013, pp. 604-605) have suggested that mentors improve the

intellectual links of theory to practice so that these are “hand in hand”. In other words in nursing skills an approach of what it is and why we do it would be the most useful mentoring pedagogy for student’s with dyslexia to learn in the practice placement environment. In Black, Baillie and Kane’s (2011, P. 21) study a student mentor recognised the need for mentors to change “teaching methods to suit the individual.” However, the students in my study experienced the homogeneity of being treated the same as the students who did not have dyslexia. In reality this was felt to be an unfair treatment and may result in disadvantage and maleficence for communities of students with dyslexia. In her study White found that students with dyslexia do think that other student nurses without dyslexia cope better on practice placements (White, 2007) and this may be because those with dyslexia feel that practice placement pedagogy is geared toward homogeneity and does not allow for difference such as the deficits of dyslexia. Issues of equality will be examined in 5.2.3 along with the issues of inclusive education that Beth alludes to here [see 5.2.2].

Beth: “My mentor said it’s not right for people who can’t spell to try and be nurses...She looks at me, it gives me an impression she’d been thinking, “She can’t spell even simple words”...She pulled a face and I felt bad, she hurt my feelings”

Beth is not alone as a student with dyslexia on practice placements also experienced “bad feelings” toward herself (Crouch, 2008, p.33) and students were found to have low confidence in the study undertaken by

Child and Langford (2011). Elevated levels of stress, anxiety, sadness, depression, exhaustion, and self-consciousness associated with low self-worth and low worth relative to others were results from a research analysis by Nalavany and Carawan (2012) which examined negative emotional experiences of adults with dyslexia [not student nurses on practice placements].

Stress brings risk to higher levels of error caused by lapses in concentration (Steele *et al.*, 2017) and is to be avoided and mitigated wherever possible amongst the healthcare team in the clinical practice placement environment. Mentors could make small changes to reduce the stress, anxiety, sadness and self-consciousness that student nurses with dyslexia experience (Nalavany and Carawan, 2012) by planning some interesting and productive pedagogy for them. However, the students in my study felt that they did not have this level of engagement from their mentors and they felt that this is because they are not assessed by their mentors for their individual diverse learning needs.

Doris: "They've never actually asked if I need any help...they don't ask how I need this help and they do not try to help me"

This is paired with the students with dyslexia disagreeing/strongly disagreeing that their mentor talked to them like an individual and they did not feel that they were treated like an individual:

Doris: ...“people automatically think that you got something wrong with your intelligence when you say dyslexia”

Gill: “They’re like, “Oh, hurry up”...I’m not given time to ask questions...things go a bit tense”

In her findings Crouch (2008) stated that students with dyslexia were equally aware of time pressures set by mentors. Research results from students with dyslexia [not nursing students] showed them to be slower to ascertain the correct answers in mental and written arithmetic (Simmons and Singleton, 2008). Child and Langford echo this on the issue that student nurses with dyslexia take more time to do tasks on practice placements (Child and Langford, 2011). Mentors could make small changes to alleviate the self-consciousness that student nurses with dyslexia experience (Nalavany and Carawan, 2012) through some kind and encouraging words. But according to the students’ experience of practice placements in my study, they felt that mentor support for diverse learning for those with dyslexia was poor:

Adam: “Seen as disability...a bit of a negative thing...They feel like you’re not capable...maybe they thought that they got to babysit you a little bit or give you that much support”

Gill: “I didn’t find any support or help, possibly they just whitewash you dyslexic”

Doris: “I have heard comments about me that I am lazy and sitting down at the computer. But I’m looking up...something I will have asked and nobody seems to know or there is conflicting information...It is quite the opposite of lazy”

Doris is not alone in this experience, as a student with dyslexia within the practice placement setting in Ridley’s study had also been described

as “lazy” (Ridley, 2011, p. 39). There are negative feelings projected toward those with dyslexia (Walker *et al.*, 2013). In fact Ridley found that dyslexia is “entrenched in negative attitudes” (2011, p. 44) and that student nurses were “concerned about negative attitudes of mentors working in a caring profession” (Ridley, 2011, p. 41). Poor mentor-student relations with unhelpful mentor behaviours and negative experiences of student nurses are an international issue whether or not the student has dyslexia. An Australian study by Curtis, Bowen and Reid (2007) explored mentor-students’ relations and found that 57% experienced powerlessness and becoming invisible or witnessed humiliation and a lack of respect. These experiences prevented nursing student’s engagement with practice placements thus limiting their learning opportunities. An American study (Anthony and Yastik, 2011) found poor mentor-student nurse relationships with exclusionary, hostile, or rude and dismissive mentor behaviour, resulting in students feeling like outsiders in practice placements. In Canada Clarke *et al.* (2012) found that 88.72% student nurses reported experiencing unhelpful mentor behaviours in practice placements and resultantly 13.06% considered leaving their course. Palaz’s (2013) study of Turkish mentors’ unkind behaviour found a detrimental effect on nursing students with 71.34% claiming that they lost concentration and 66.4% experiencing exhaustion. Also O’Mara *et al.*’s (2014) Canadian study

found that difficult relationships with mentors prevented student nurses asking questions or engaging with learning experiences.

Mentors as UK citizens in a civilised society should be contributing to the building a fairer and sustainable existence for nursing students (Pleyers, 2010). A decade ago White (2007, p. 39) “proposed the establishment of peer support groups” for student nurses with dyslexia and the idea of a “support group for student nurses with dyslexia” also came out of Child and Langford’s research (2011, p. 46). This kind of philanthropic establishment would be negated if mentors were to examine the disjuncture between their values and beliefs on caring for and nurturing their students with dyslexia in conjunction with the conceptual frameworks of the 6Cs (Cummings and Bennett, 2012), code (NMC, 2015a), mentorship standards (NMC, 2008) and local NHS Employers (2017) diversity policy.

In addition to values, attitudes and beliefs that are diverse to establish the right “mind set” (Black, Baillie and Kane, 2011, P. 20) practice placement mentors need to have a good working knowledge of dyslexia to be helpful to student nurses with dyslexia. However, in my own study the students felt that their mentors’ knowledge was poor rendering them unable to help:

Adam: "I don't think...people mean to do it...they don't understand"

Cathy: "She said "Why you want to write your notes you can't understand?"

Eva: "Oh that's wrong," she said "Oh, it's because you're dyslexic you weren't capable"...so they kind of left you behind"

Freda: "...they look at you like someone stupid...because they think they are more intelligent...they'll be thinking, "Why didn't your brain work? Why was your brain not able to function in the right way"

Helen: "I told the charge nurse, "I'm just letting you know I have dyslexia," I wanted to have that talk so I'd get some understanding and the help I need...and he was like, "That's not an excuse...I felt a bit...pushed back a bit...I felt stupid, and it's one of the worst...I hate feeling stupid. I hate it, because I'm not stupid"

In her own research study Ridley found that one of the student nurses with dyslexia had actually been described as "stupid" whilst another had also experienced a "peer [who] sees it all as a 'scam' and making it up" (Ridley, 2011, p. 39). There is a "need to create a more accepting atmosphere" in practice placements as found in the research by Sanderson-Mann *et al.* (2012, p. 98). In Black, Baillie and Kane's (2011, p. 21) study a mentor was described by a student mentor as being "ignorant." According to findings in Sanderson-Mann *et al.*'s study (2012, p. 93) mentors did "lack awareness on dyslexia and its effects." Child and Langford (2011, p. 44-45) also found a lack of mentor knowledge on dyslexia "mentors don't know about dyslexia" and need a "practical knowledge-base."

Mentors deficit in dyslexia knowledge and diverse pedagogy is an enormous problem for nurse educationalist as 60% of mentors felt they did not know enough about disability (Walker *et al.*, 2013, p. 52).

Mentors were found to “need better understanding” of dyslexia with “knowledge about living with dyslexia” (Sanderson-Mann *et al.*, 2012, p. 93-94). Crouch (2008, p. 33) had also found that “mentor awareness and understanding of dyslexia” was needed. Mentors felt that they lacked the appropriate skills to support disabled students (Walker *et al.*, 2013).

They also had a lack of knowledge on how to help a student nurse with dyslexia (Sanderson-Mann *et al.*, 2012; Walker *et al.*, 2013).

A national project to improve mentors knowledge for practice was published by the Royal College of Nursing (Cowen, 2010a). Since then, local project resources to address the mentor knowledge deficit and raise awareness on neurodiversity have been published by Black, Baillie and Kane, (2011), Tee and Cowen (2012) and Wharrad *et al.* (2012).

There is apparently still a need for an evidence-based text book for mentors on the range and severity of dyslexia deficits and diverse pedagogy for student nurses with dyslexia on practice placements.

However, research results were encouraging in Black, Baillie and Kane’s (2011) comparative study on an educational intervention with a cohort of

stage-one mentors who were student mentors undertaking their initial stage-two mentorship education coursework (NMC, 2008). Following exposure 98.3% either agreed or had a tendency to agree that they that they felt confident that they understood what dyslexia meant and 91.6% felt positive about mentoring a student with dyslexia. It is hopeful that this translated into the student mentors actual diverse mentoring practices in a sustainable way, and the research team might like to consider how this could be explored by applying my own research study design to future research with the students of these mentors.

It is unsurprising that faced with the incivility borne out of mentor ignorance and poor student-mentor social relations that the majority of students with dyslexia interviewed in my study disagreed/strongly disagreed that they enjoyed going to their practice placement. They rather more felt that they did not enjoy it as described by Eva, Freda and Gill:

Eva: "I am not happy to go to placement, I just couldn't face her... are you capable of being a nurse...I'm stupid because I need more time...After that I didn't want to go into the placement"

Freda: ..."the mentors are not patient...I go blank and freeze up...Yes this does spoil my enjoyment on placement"

Gill: They talked about another student like it's a disease...I try not to let this situation bother how I'm feeling, but it's hard"

Eva identified that she needed more time and “time management” was found to be a problem experienced by students White’s (2007, p. 39) study and this links with my earlier discussion on the diverse way a student nurse with dyslexia might learn. The students in my study learnt fast lessons from their negative practice placement experiences and soon felt fearful to disclose their dyslexia as depicted by Eva and Freda:

Eva: “I overheard from the mentor...that people with dyslexia are so stupid they don’t pass or they get low grades and this is why they act this way and score is low. She then said people with dyslexia shouldn’t be allowed into nursing...people have that doubt...that you are not capable of being a nurse”

Freda: “Immediate judgement is made “How can she be a nurse?””

White (2007, p. 38) also had a comparable comment from mentors about students with dyslexia from her interview findings “what are you doing in nursing then if you have got problems like this?” Another research study also found that student nurses with dyslexia feel critically judged (Child and Langford, 2011) by others when they are on practice placements.

Understandably nursing students with dyslexia are reticent to disclose their learning difficulties to their mentors on practice placements as reading, spelling, auditory and visual are hidden disabilities and can be kept hidden (Child and Langford, 2011). According to Sanderson-Mann *et al.*’s (2012) findings, if students with dyslexia don’t disclose then most are indistinguishable from student nurses without dyslexia. This was

because practice placement learning competency achievement (NMC, 2010) is the same for students whether they are with or without dyslexia. However, student nurses with disclosed dyslexia are perceived by mentors as not being able to work at the same level as student nurses without dyslexia (Walker *et al.*, 2013). Research evidence shows that student nurses with dyslexia did not disclose to their mentor as they felt “worried that this would affect the way their competency was assessed” (Dearnley *et al.*, 2010, p. 4) and that it would impact their future local employment opportunities (Walker *et al.*, 2013).

In a study of university students with dyslexia [not just nursing students] a researcher made it clear that disclosure risks becoming extra visible (Goode, 2007). Other researchers have suggested that “being openly disabled in the NHS setting appears to require a degree of personal courage” (Dearnley *et al.*, 2010, p. 5). Student nurses have been found to be selective about disclosure and who they informed (Walker *et al.*, 2013) and this is dependent upon whether the mentor was perceived to be empathetic and receptive (Morris and Turnbull, 2007). In a more recent study 98.3% of student mentors perceived that student nurses with dyslexia will likely disclose to an empathetic mentor, although in the same study it was identified that contrary to this some stage-two mentors are perceived as “intimidating” (Black, Baillie and Kane, 2011,

p. 21). In another study Sanderson-Mann *et al.* (2012, p. 94) found that student nurses “only told mentors if necessary or appropriate” and they found that issues of stigma influence this, for example they do disclose if they feel like their mentor is losing patience with them. According to Crouch (2008, p. 33) “non-disclosure” was commonplace. Disclosure causes fear of ridicule (Ridley, 2011)

Ridley (2011) found that disclosure causes anxiety and is entrenched with fearful feelings around fear of ridicule and in their study Sanderson-Mann *et al.* (2012) found that disclosure is fraught with fear. White highlighted “fear of potential consequences of disclosure” (White, 2007, p. 38). Student nurses with dyslexia fear that disclosure will lead to them to be treated unfavourably on practice placements (Walker *et al.*, 2013). In another study a student nurse who had disclosed her dyslexia diagnosis to her mentor on practice placement felt “branded thick” Ridley (2011, p. 37) and became fearful of support for learning being less distinct or denied. This is because a stigma is attached to dyslexia of being “thick” or “stupid” as if the person is intellectually inferior (Stanley *et al.*, 2011, p. 21). Students with dyslexia worry that if they disclose then their mentor will stop giving them new learning and not stretch them (Sanderson-Mann *et al.*, 2012). The major concern is that disclosure

may be seen by others as a negative toward the student nurses ability to perform effectively (Walker *et al.*, 2013) and attain competence (NMC, 2010).

However, non-disclosure means that students are isolated further from potential help as non-disclosure compounds the experience of mentor pedagogy homogeneity. In other words, if students don't disclose their dyslexia to their mentors then their diverse learning needs cannot be known or acted on by mentors (Cowen, 2010b). As pointed out by Crouch (2008) in her study on student nurses with dyslexia, mentors need to be fully informed of dyslexia and be aware of the student's need.

The students themselves who disguise their dyslexia might struggle to maintain a positive sense of self-identity (Holland and Lachicotte, *in* Daniels, Cole and Wertsch, 2007) as hiding one's characteristic such as disability impacts on one's sense of personhood (Stanley *et al.*, 2011).

Furthermore disclosure has the potential to "exert some control" in relation to how the student is perceived and treated by their mentors (Stanley *et al.*, 2011, P. 21). I choose to disclose my own dyslexia to student nurses within my own university setting as I want to project a positive and visible image of a nurse with dyslexia. I have disclosed my dyslexia within my thesis work as I want to identify and celebrate the

positive contribution that one can make to nursing education. A social movement of senior nurses disclosing their dyslexia and acting as role models to reduce stigma such as Dame Sarah Mullally, former England Chief Nursing Officer (Mullally, 2005) and Senior Lecturer (nursing) at LSBU and Harry Bowling Prize winning author Jean Woolmer (LSBU, 2009b) and my own actions accelerate efforts toward making a positive image of dyslexia within nursing and bring benefits for mentor-student relations.

Research supports the notion that “disabled practitioners feel that their empathy and understanding is heightened by their own experiences” (Walker *et al.*, 2013, p. 53) and this may be why there are high proportions of student with dyslexia attracted into nursing as a caring profession. This is illustrated in the $n=126$ or 12.93% of student nurses with dyslexia [see Table 17 (LSBU, 2007/8)] within the local overall 974 student body (HESA, 2010) in my own study. Not only is this is higher than the 7% of the UK population with the condition (Peterson and Pennington, 2012) but the student nurse population is predominantly female dominated at 83.3% [see Table 17 (LSBU, 2007/8)]. As dyslexia is underdiagnosed in females (Rayner *et al.*, 2012) there may be an even greater representation of women with dyslexia who are student nurses.

In their study Wray *et al.* (2013) are clear that there is no reliable percentage on the UK numbers of student nurses with dyslexia and this is compounded by the fact that many nursing students have undiagnosed dyslexia. There is apparently a need for a text book for stage-two mentors and stage-four lecturer/practice educators (NMC, 2008) on evidence-based dyslexia deficits [see 2.1] and the likely signs and symptoms of this as manifested in the university and practice placement contexts along with guidance on how to encourage these student nurses to seek diagnostic assessment [see 2.1.7].

5.2.2 Inclusion/exclusion - discrimination

Inclusion should be normative and fair within practice placements with stage-two mentors who speak to students about how they can be involved in their learning (NMC, 2008). To act within constructs of social justice [see 2.1.7.2] mentors should be concerned for student welfare and advocate for those with dyslexia. Realities of practice placement are that student nurses who disclose their dyslexia deficit experience psychological relations with their mentor that are geared toward exclusion. This is unfair for the student with dyslexia as their mentors do not involve them with their learning and therefore mentors are perceived by students to be ignorant on dyslexia as a disability. Mentors seemingly avoid the issue and do not show concern for welfare and show ridicule

directly or indirectly toward students with dyslexia. Resultantly students feel excluded and they perceive this to be a form of disability discrimination due to their dyslexia deficit. This phenomenon constitutes new knowledge that adds to the existing research knowledge on student nurses with dyslexia [see Table 42].

Datum-set: Adam	
Questionnaire results:-	Interview findings:-
Q. 1 (1) I disagree that my mentor usually considered my feelings.	"Some people don't understand it. They just think you are dumb...I'm scared of...staff... saying, "He still doesn't know anything!"
Q. 5 (9) I agree that I was dissatisfied with what was done on practice placements	"If I know someone is not happy with me because of my dyslexia...I feel under pressure... when I mention I have dyslexia, it was...she wasn't happy with that...I was rushed and pushed..."Oh, that's totally wrong," then I just thought, possibly I can never do this again, it affect my confidence. I have low self-esteem being told, "Oh, you can't do this" and "You're not able to do this."...So it's just like, "You can't, you can't, you can't...I...feel a bit scared... to say, "Yes I can""
Q. 6 (13) I disagree that my mentor tried hard to help me.	"Talking to people on...placement...I'm quiet...I'm not grasping it, it isn't clear to me. I often feel unsure about what I am supposed to be doing"
Q. 12 (25) I agree that my mentor seldom spoke to me.	"...some would say, "I would do it myself," because maybe I'm too slow to do it, so..."NO... DO IT MYSELF" because, they just want to think that because I can't keep up with their speed. To me it's just hopeless sometimes. Knock off my confidence as well. I don't know about whether I would go to that person again...I do look forward to the end of the shift"
Datum-set: Beth	
Questionnaire results:-	Interview findings:-
Q. 1 (1) I disagree that my mentor usually considered my feelings.	"I just feel it was a bit uncomfortable because my mentor, I had a feeling she wasn't happy, and she was a little bit angry...she emphasised... "because of your dyslexia"...I feel... "something's wrong with me"...like you are stupid to have dyslexia...For me it's really embarrassing...it wasn't good to say it...so I'm sure she must've said to someone, "Oh, that woman is really, really dumb...Some people are opinionated on dyslexia, I find it has a stigma with stupid...Dyslexia is not stupidity, apart from the stupid people not understanding what it feels like to have these bad things said to me"
Q. 5 (9) I strongly agree that I was dissatisfied with what was done on practice placements	"I am looking ahead on the off duty hoping that certain people are not on the rosta to work with again...it's really hard for me...I need to exceed, to prove I am good enough...She say I need to be quicker and quicker and quicker...but she never show me any technique on how to be quicker, quicker...when I wasn't with her everything was fine...With her, it's very stressful and I feel anxious"
Datum-set: Cathy	
Questionnaire results:-	Interview findings:-
Q. 5 (9) I strongly agree that I was dissatisfied with what was done on practice placements	"...there is all this support in uni for students with dyslexia but on placement I find that I am on my own with it. I find it hard to cope with dyslexia on placement"
Q. 6 (13) I strongly disagree that my mentor tried hard to help me.	"I think sometimes, people don't know how to help in some way I wouldn't want to go to them anyway. It puts your confidence down...sometimes you feel like you're pestering them, just because you don't understand, like it is that I'm not capable"
Q. 12 (25) I strongly agree that my mentor seldom spoke to me.	"I probably would tell the mentor that I have dyslexia, if I felt more comfortable...my mentor doesn't make me feel comfortable with disclosing it to her...I only tell...when I decided they probably won't discriminate against me..."
Q. 18 (38) I agree that my mentor dominated our debriefing/reflective discussions.	"I don't want to feel as though I am not as good as everyone else...at the time she made me really nervous and forgetful...told off for doing it in the wrong order...I get like that under stress. In the end I was this blubber jelly of a mess and appeared really stupid and useless...Embarrassing, I tell you, that's embarrassing!"
Datum-set: Doris	
Questionnaire results:-	Interview findings:-
Q. 1 (1) I strongly disagree that my mentor usually considered my feelings.	"Sometimes people think "spastic" and say that kind of thing about me behind my back, and I have heard them do this...I am worried about being spoken badly about. I'm afraid of being judged...the stigma around the ward, "oh, she's dyslexic"...and they tar me with a brush... and I think they want us to feel bad...People...have a bad impression about you..."

Q. 6 (13) I strongly disagree that my mentor tried hard to help me.	...“my mentor says to me, “You shout them out and I’ll put them in the bag.” The drug words are really hard for me to look at and say out loud. First I have to break the words down... well that’s way too embarrassing in front of the patient... So I avoid saying them...to say the word is very difficult for me and frustrating”...
Q. 12 (25) I strongly agree that my mentor seldom spoke to me.	“I just want to be liked by people, you always want to feel part of the team... I think it’s down to individuals. They can make or break a placement experience”
Q. 18 (38) I strongly agree that my mentor dominated our debriefing/reflective discussions.	...“when the mentors tried to explain they are often rushed and don’t have the time to teach me what to do”
Datum-set: Eva	
Questionnaire results:-	Interview findings:-
Q. 1 (1) I disagree that my mentor usually considered my feelings.	When people are looking at me, I get really nervous. I have it in my mind, “I’m going to say it wrong,” panic! panic! And the person looking at me...“Oh, she can’t speak words,”...you have like embarrassing moments when you might have said something...not accurate, pronounce it wrong and people laugh”
Q. 5 (9) I agree that I was dissatisfied with what was done on practice placements	...“I do feel a bit on edge...they moving me to a place that you’ve never done before... I do get a bit anxious...someone has kind of knocked you down... I am very relieved... I only had two weeks left and I knew I had to finish it off...since the bad experience”
Q. 6 (13) I disagree that my mentor tried hard to help me.	“They’ll say, “Oh, she can’t spell”...things like that is embarrassing. So, I tried hard in front of this mentor to show I am good enough. So its best I go in the toilet, check it out, and come back. Because you look really stupid when you say something in placement and its wrong, and you can’t pronounce it. So, it’s best I just go in the toilet, sound it out and then come back, then have the confidence to do it”
Q. 12 (25) I agree that my mentor seldom spoke to me.	“I can’t talk to anyone...no one knows about it, who knows about dyslexia on placement? Who understands?”
Q. 18 (38) I strongly agree that my mentor dominated our debriefing/reflective discussions.	“I have not seen anyone able to negotiate...the mentor is saying that they will set an essay ...I have never heard of anyone with dyslexia negotiating to be able to explain it or discuss it instead of write it down in an essay. I did ask my mentor...but this was not honoured”
Datum-set: Freda	
Questionnaire results:-	Interview findings:-
Q. 1 (1) I disagree that my mentor usually considered my feelings.	...“they talk behind my back...I had previously heard them laugh about my blue tint glasses, they say “who she think she is? Film star?” I have eye problem when reading and I have blue lenses. People laugh and are unkind to me...someone ask me “Why I don’t have a dog instead!”...I don’t need a guide dog”
Q. 5 (9) I agree that I was dissatisfied with what was done on practice placements	...“she asking me again, again to leave to get thing for a dressing. Two other students watching, they not asked. I was to cupboard and back, to cupboard and back, to cupboard and back again, again, again. I think she constantly sending me away from her...all I really saw was the bandaging at the end”
Q. 6 (13) I strongly disagree that my mentor tried hard to help me.	“She ask me to do the other dressing, and I panic a bit thinking, I haven’t even seen the order you want things in...I think if maybe she was want me to fail and be wrong with the two students to watch me”
Q. 12 (25) I agree that my mentor seldom spoke to me.	...“he ask me, “You have to write a reflection”...I don’t know what he want. Maybe he want it perfect. I brought two full pages to him. Everything that happened, he’s sat there reading. It took me two days to write it up and I felt angry as I want to write essay for uni instead. People don’t know how long time all the writing takes edit, edit edit write it again, again, again to get good enough...it is a big worry waiting for his feedback and worrying if all my effort was wasted time”
Q. 18 (38) I agree that my mentor dominated our debriefing/reflective discussions.	...“sometimes people do talk about me and don’t want to hear about my viewpoint”
Datum-set: Gill	
Questionnaire results:-	Interview findings:-
Q. 1 (1) I strongly disagree that my mentor usually considered my feelings.	...“dyslexia...it affect your work...I spoil my placement being labelled dyslexic student, because I got the impression early on its how people would take, dyslexic people...I fear for it, it’s always on the back of my mind...someone with less knowledge...something I haven’t done right... I’m just someone who is not with it”
Q. 5 (9) I strongly agree that I was dissatisfied with what was done on practice placements	“Writing my notes is slower than others. I’m still writing when they have finished and gone off to break, so I notice that I get a shorter break time”
Q. 6 (13) I disagree that my mentor tried hard to help me.	“Everything I do in front of mentors I say to myself, ‘All right, I need to get this right or they’ll think...someone who is not concentrating or someone who is not focused, who don’t know, someone...who doesn’t care’...I am seen as an extra burden by my mentor”
Q. 12 (25) I strongly agree that my mentor seldom spoke to me.	“A lot of the time mentors fire off instructions...and they don’t explain what they mean... time is wasted trying to find out what is meant...I’ve just find it very difficult for them to understand...that is a problem”
Q. 18 (38) I agree that my mentor dominated our debriefing/reflective discussions.	...“it’s difficult to actually stand up with someone who is more senior than you...carry on with it...breathe in...I worry that it could give my mentor the impression that I am not listening, when I am”
Datum-set: Helen	
Questionnaire results:-	Interview findings:-
Q. 1 (1) I strongly disagree that my mentor usually considered my feelings.	“He was talking about career progression, what you’d have to do to go from a band five to eight, to go up, and up.... and how you need a master’s degree. I sat there and I thought about it secretly to myself, “Wow! I could do this”...I asked if this was full...or part-time

	studies...he said to me, "It's pointless...you shouldn't do that."...he made me feel really small in front of the other students...I couldn't wait for the shift to end to get away from the nasty comment"
Q. 5 (9) I strongly agree that I was dissatisfied with what was done on practice placements	"I've not seen any nurses helping one another out with dyslexia. I feel like there's lack of support in such a supportive career...we talk a lot...that caring and compassion is so important, but no one supports...no one helps one another"
Q. 6 (13) I disagree that my mentor tried hard to help me.	"What's the point of learning something 10 different ways just to please 10 different mentors? I like to know there is one right way to do it and the best way to do it. I use the Marsden Manual to see the evidence-base way but mentors use their own way to assess and decide what I have done right and wrong"
Q. 12 (25) I strongly agree that my mentor seldom spoke to me.	"I'm worried, that people are going to do this nasty bitching about me behind my back..."it's just that she's a complete spastic"...It's a real eye opener, I never knew having dyslexia was such a bad thing...I hate dyslexia"
Q. 18 (38) I strongly agree that my mentor dominated our debriefing/reflective discussions.	"I feel awkward...I always feel it doesn't really mean anything to them...I always feel like they are going to get frustrated...my mentors saying, "You can do better" trying to get me motivated when I was motivated and it was all just a cycle of frustration..."You need to try harder," when I was trying my best, trying so hard, as hard as possible. I was sat there thinking "please don't fail me, I am doing as hard as I can"
Collective descriptive analysis:	Collective interview interpretative phenomenological analysis:
Q. 1 (1) 87.5% <i>n</i> =7 strongly disagree/disagree 7/8 that my mentor usually considered my feelings. Q. 5 (9) 87.5% <i>n</i> =7 strongly agree/agree that I was dissatisfied with what was done on practice placements Q. 6 (13) 87.5% <i>n</i> =7 strongly disagree/disagree that my mentor tried hard to help me. Q. 12 (25) 87.5% <i>n</i> =7 strongly agree/agree that my mentor seldom spoke to me. Q. 18 (38) 75% <i>n</i> =6 strongly agree/agree that my mentor dominated our debriefing/reflective discussions.	Superordinate theme; <ul style="list-style-type: none"> • Discrimination Subordinate themes: <ul style="list-style-type: none"> • Inclusion (should be normative and fair) • Exclusion (reality unfair treatment)
	Please note that all of the participants' interview findings in Table 42 are precise extracts from their transcript as shown. They are intentionally being left as it was described in the original and every citation is presented <i>sic erat scriptum</i> . In view of this I have elected not to highlight each grammatical or usage mistake followed by [<i>sic</i>].

Table 42 - findings on inclusion/exclusion and discrimination

5.2.2.1 Discussion - what did it feel like on practice placements?

In this discussion I have made informed judgements on complex issues

in my specialist field of nursing education (FHEQ, 2008), I believe that

my intellectual rigor is a hallmark of the synthesis of my data into new

knowledge (van Manen, 2015). The primary qualitative data collected in

my research study [see 5.2.2; Table 42] show descriptions of lived-

experiences that I interpret as being the exclusion of student learning

through practice placement mentors pedagogy. I also found descriptions

interpreted as prejudice directed toward students with dyslexia from

stage-two mentors (NMC, 2008). The students described lived-examples

where they appeared to be treated unfavourably because of something

arising in consequence of their hidden disability and this is unlawful (Great Britain. Equality Act, 2010).

Students with specific learning difficulties (SpLD), including dyslexia, constitute just under half of the 103,330 UK university population that declare a disability. Also dyslexia is the largest single group of those with a disability (DSA-QAG, 2016), and all disabled students including those with dyslexia have a right to inclusive education (OHCHR, 2016).

Mentors should be supportive in the students learning experience (NMC, 2008) and speak to their students with dyslexia about how they can develop effective pedagogy for their individual learning requirements (Cowen, 2010a). However, Helen described how she did not see this happening on her practice placement:

Helen: ...I've not seen any nurses helping one another out with dyslexia. I feel like there's lack of support in such a supportive career...we talk a lot...that caring and compassion is so important, but no one supports...no one helps one another"

Pedagogy should be personalised to maximise the students learning experience (Cowen, 2010a) and this should improve student satisfaction within the practice placement environment. However findings from my study show that the students felt that their mentors seldom spoke to them and it appears that they did not involve them in developing effective pedagogy:

Cathy: “people don’t know how to help...I wouldn’t want to go to them anyway...sometimes you feel like you’re pestering them, just because you don’t understand”

Doris: ...“when the mentors tried to explain they are often rushed and don’t have the time to teach me what to do”

Eva: ...“I can’t talk to anyone...no one knows about it, who knows about dyslexia on placement? Who understands?”

Freda: ...“sometimes people...don’t want to hear about my viewpoint”

Gill described her lived-experience depicting feelings that I interpret as her mentor ignoring the fact that she had specific learning needs:

Gill: ...“A lot of the time mentors fire off instructions...and they don’t explain what they mean... time is wasted trying to find out what is meant...I’ve just find it very difficult for them to understand...that is a problem ...I worry that it could give my mentor the impression that I am not listening, when I am”

Gill’s lived experience constitutes exclusive pedagogical practices (OHCHR, 2016) that appeared to disadvantage her university learning experience (DSA-QAG, 2016) whilst within her practice placement. It seems as if Gill’s mentor has not spoken to her about effective strategies for her protected characteristic of dyslexia (Great Britain. Equality Act, 2010). This mentor’s behaviour appears to exclude Gill from the societal membership grouping to those with a protected characteristic (Great Britain. Equality Act, 2010) with entitlement to specific individualised reasonable adjustments (Equality and Human Rights Commission, 2016e), and this will be examined later in chapter five [see 5.2.3].

My research found that at the outset mentors had a tendency to not acknowledge the students dyslexia existence as a protected characteristic or SpLD (Great Britain. Equality Act, 2010). It appears that with Cathy, Eva and Freda some mentors failed to achieve the mentorship standard domain one: “establishing effective working relationships” (NMC, 2008, p. 25) which is pivotal to effective pedagogy for students in their practice placements (Dewey, 1938; Houghton, 2016).

Eva’s mentor (NMC, 2008) was ignorant on dyslexia without knowledge of the diagnostic signs and symptoms (NHS Choices, 2015b). It is my interpretation that students appear to feel as if they are not being given the same opportunities to learn as they would get if they did not have dyslexia. Sanderson-Mann *et al.* (2012, p. 95) found that students with dyslexia in their study “feel at a disadvantage” and in earlier research White (2007) found that students think other student nurses without dyslexia cope better in practice placements (White, 2007). Direct quotations from two students in Sanderson-Mann *et al.*’s study were (2012, p. 92) “other students cope better than me” in practice placements and “other student nurses without dyslexia are coping better” (Sanderson-Mann *et al.*, 2012, p. 95). Cathy and Eva’s comments also suggests that this is because mentors are lacking in

knowledge to competently mentor student nurses with a specific learning disability such as dyslexia, and I found more descriptions on this in my data and discussed this in previously on students diverse learning needs.

However, the pedagogy within practice placements should be inclusive (Great Britain. Equality Act, 2010) and mentors should be supportive toward the students specific individual learning needs (NMC, 2008) and as Helen states “*caring and compassion is so important [in nursing]*” and a perceived lack of caring from peers in the nursing profession was also found by Ridley (2011). Mentors could develop their 6Cs of care, commitment, communication, compassion, competence and courage (Cummings and Bennett, 2012) in relation to mentoring students. The application of this skills set would show support toward their student with dyslexia, this could improve the student perceptions of their satisfaction with their practice placement. Freda feels that mentors do not welcome her viewpoint, and contrary to this students with dyslexia should feel satisfied that their mentor is engaging in dialogue with them and they should feel that they are spoken with about their personalised specific learning deficit and needs (Cowen, 2010a).

The students in my study appeared to recognise and describe mentoring pedagogy that was not always helpful in the practice placement context and I interpreted this as mentorship that was not always supportive toward students with dyslexia:

Cathy: ...“there is all this support in uni for students with dyslexia but on placement I find that I am on my own with it. I find it hard to cope with dyslexia on placement”

Gill: ...“Everything I do in front of mentors I say to myself, ‘All right, I need to get this right or they’ll think...someone who is not concentrating or someone...who doesn’t care’...I am seen as an extra burden by my mentor”

My students described lived-experiences which appear to involve some unsatisfactory mentor-student psychosocial relations and it is my interpretation that some mentors avoided involving the student in finding effective learning strategies. These experiences apparently left Adam feeling that his mentor did not try hard to help him:

Adam: “I know someone is not happy with me because of my dyslexia...I was rushed and pushed...“Oh, that’s totally wrong”...being told, “Oh, you can’t do this” and “You’re not able to do this.”...So it’s just like, “You can’t, you can’t, you can’t...”

Beth: ...“I feel... “something’s wrong with me”...like you are stupid to have dyslexia...For me it’s really embarrassing...

Doris: ...“I just want to be liked by people, you always want to feel part of the team...I think it’s down to individuals. They can make or break a placement experience”

I interpret that my findings show that students felt excluded on practice placements. Not being included because of dyslexia deficits is a form of discrimination (Great Britain. Equality Act, 2010) and this was apparently an unpleasant experience for Helen:

Helen: ...“He was talking about career progression.... and how you need a master’s degree...he said to me, “Its pointless...you shouldn’t do that... feel really small”

Helen’s feelings of isolation and social injustice apparently resulted from her mentors (NMC, 2008) discriminative tendencies (Europe. Human Rights Act, 1998: Article 14). She experienced what could be construed as unnecessary NHS employee behaviour towards persons with protected characteristics (Great Britain. Equality Act, 2010). UK policy to build a fairer Britain upholds that student nurses have a right to participate to fulfil their potential (Great Britain. GOV.UK, 2010). Helen’s mentor appeared to be excluding her from the world of higher degree studies by his discouraging words. Nurse registrants with dyslexia do successfully pursue post-registration studies and it is not helpful for Helen’s mentor to discourage her from being included in her right to reach her full potential. Another student with dyslexia in a fellow researcher’s study on my phenomenon held similar ideas to Helen’s “why not go on to do a PhD?” (Ridley, 2011, p. 39). There is a role for stage-two mentors and stage-four lecturer/practice educators (NMC, 2008) to inform students about the inclusive opportunities for higher university degrees (Great Britain. GOV.UK, 2010).

Mentor guidelines purport that mentors should build good working relationships with their students (NMC, 2008). This was not experienced

by Adam and in the research study by Ridley (2011, p. 39) one of her students stated that “mentors are abrupt”. There is a duty for mentors to anticipate the needs of their disabled students (Great Britain. Equality Act, 2010). This involves undertaking proactive pedagogic measures to increase inclusion for students within this marginalised group to “create an accessible clinical learning environment” (Child and Langford, 2011, p. 46).

An effective mentoring pedagogy in practice placements for students with dyslexia involves the student being asked to describe their individual areas of weakness to their mentor e.g. spelling and/or short-term memory. As Cathy states, on her coursework this pedagogy happens as in the 50% university campus element but she has apparently not experienced it on the 50% practice placement element (NMC, 2010). Therefore Adam, Cathy and Helen may have experienced psychological feelings of exclusion within their placement (OHCHR, 2016). Employers have a responsibility to ensure that mechanisms are in place so that the disabled workforce members are within an accessible/inclusive environment and this includes student on their practice placements (Equality and Human Rights Commission, 2016e).

However, as Ridley points out generic support mechanisms in the practice placement context may not all be necessary or useful (Ridley, 2011) and this is because of the sub-types of dyslexia [see 2.1.3] and the differing range of deficits that individuals have. It is therefore important that mentors engage with an individual assessment of the student's personalised specific learning needs within the first week of their practice placement allocation (NMC, 2008).

In a good mentor-student relation anticipatory strategies are discussed as solutions and are agreed in a supportive way e.g. use of mobile phone technology to check spellings and the digital recording of handover as an *aide memoire*. These inclusive strategies can be tried by the student with dyslexia within the practice placement context to see what is and is not helpful and productive for the individuals learning (Cowen, 2010a). It is reasonable to suggest that an enabled student is a productive student and will not be perceived by the mentor as a "burden" which did concern Gill. In their research Walker *et al.* (2013, p. 50) found that 83% of NHS healthcare workers perceived that disabled people get in the way. Considering this commonly held view it is unsurprising that students with dyslexia in my study experience some unsatisfactory mentor-student relations whilst on the 50% clinical practice element of their coursework (NMC, 2010).

What appear to be non-constructive learning activities that were unsupportive and apparently did not meet the students personalised specific learning needs resulted in Adam, Cathy and Eva feeling that an unsatisfactory mentor-student relationship had developed. It is my interpretation that students felt that their mentors had not considered their needs and they described lived-experiences where this impacted their performance:

Adam: "Some people don't understand it. They just think you are dumb...I'm scared of...staff... saying, "He still doesn't know anything!"...Knock off my confidence as well."

Cathy: "...at the time she made me really nervous and forgetful...told off for doing it in the wrong order...In the end I was...useless...that's embarrassing!"

Eva: "...I tried hard in front of this mentor to show I am good enough..."

Additionally it is my interpretation that Helen felt unworthy and Adam and Beth appear to favour excluding themselves from their mentors company:

Adam: "...I don't know about whether I would go to that person again"

Beth: I am looking ahead on the off duty hoping that certain people are not on the rota to work with again...With her, it's very stressful and I feel anxious"

Helen: "...he made me feel really small in front of the other students...I couldn't wait for the shift to end to get away from the nasty comment"

Mentors have a responsibility to build good working relations with their students (NMC, 2008). This can be achieved with a good evidence-based knowledge of dyslexia and a good working knowledge of how the dyslexia deficit affects students in practice placements. A good mentor-

student relation is a sustainable one and students with dyslexia would be less likely to have the feelings of Adam, Beth and Cathy.

Feeling worthy is a human right (Europe. Human Rights Act, 1998) and if a student with dyslexia like Helen has a loss of self-worth then they will feel disadvantaged. If a student nurse feels that exclusion is less stressful to them then their behaviour may become distant and withdrawn. Students who start to exhibit these behaviours are experiencing anxiety and distress and are at risk of absences from their practice placement.

It is my interpretation that some students with dyslexia felt that their situation was apparently so unsupported and so unsatisfactory that they recognised that a poor atmosphere had developed in their practice placement environment. Adam and Eva appeared to describe lived-experiences where they did not want to be at their placement:

Adam: ...“some would say, “I would do it myself”...so...”NO...I...DO IT MYSELF”...I do look forward to the end of the shift”

Eva: ...“I am very relieved...I only had two weeks left and I knew I had to finish it off...”

When students are excluded they start to feel that there is little point being on the practice placement and I found that some students with

dyslexia appeared to feel that they had lost their sense of enjoying being in this educational context as described by Cathy and Helen:

Cathy: ...“my mentor doesn’t make me feel comfortable...”

Helen: “What’s the point of learning something 10 different ways just to please 10 different mentors?...I use the Marsden Manual...but mentors use their own way to assess and decide what I have done right and wrong”

Eva is not alone with her approach to getting through her practice placement a fellow student nurse with dyslexia in Child and Langford’s (2011, p. 44) study described a coping strategy that they had adopted was to “keep your head down”. This is now contrary to all of the policy work since the Francis (2013) report into Mid Staffordshire NHS Foundation Trust Public Inquiry as student nurses and nurse registrants must actively and speak-up (Francis, 2015) and raise concerns (NMC, 2015b).

Students who feel compromised in their psychosocial relations with their mentor become vulnerable to issues being raised about their commitment to their learning and coursework (Cummings and Bennett, 2012). The light may be erroneously shone on the student to put them in the spotlight as the problem. It is an enormous challenge for the student to illuminate unsatisfactory mentoring pedagogy and unsupportive mentor-student relations as the causative factor.

In my study I interpreted that Beth and Doris felt that their mentors did not consider their feelings and they apparently described lived-experience of ignorant behaviours from their mentors that seemed to be shown toward their disability.

Beth: "I need to exceed, to prove I am good enough...She say I need to be quicker and quicker and quicker...but she never show me any technique on how to be quicker, quicker...my mentor...she was a little bit angry...she emphasised... "because of your dyslexia"...it wasn't good to say it..."

Doris: ..."You shout them out"...The drug words are really hard for me to look at and say out loud...that's way too embarrassing in front of the patient...So I avoid saying them...to say the word is very difficult for me..."

I interpret that these experiences appear to have left students with feelings that their mentor is unsupportive. It appears that the mentor-student relations for Eva, Freda and Helen were unsatisfactory on their practice placements:

Eva: ..."I do feel a bit on edge...I do get a bit anxious...someone has kind of knocked you down..."she can't spell"...that is embarrassing...I go in the toilet...sound it out and then come back, then have the confidence to do it"

Freda: ..."You have to write a reflection..." I brought two full pages to him. Everything that happened...It took me two days to write it up and I felt angry as I want to write essay for uni instead. People don't know how long time all the writing takes edit, edit edit write it again, again, again to get good enough"

Helen: ..."I'm worried, that people are going to do this nasty bitching about me...I hate dyslexia"

The students also described, what I interpret to be a range of apparently self-depreciating or unworthy feelings:

Adam: "Talking to people on...placement...I'm quiet...I'm not grasping it, it isn't clear to me. I often feel unsure about what I am supposed to be doing... To me it's just hopeless sometimes"

Cathy: ..."In the end I was this blubber jelly of a mess and appeared really stupid and useless...Embarrassing, I tell you, that's embarrassing!"

Gill...“dyslexia...it affect your work...I spoil my placement being labelled dyslexic student...I fear for it, it's always on the back of my mind...someone with less knowledge...something I haven't done right... I'm just someone who is not with it”

In their research publication Sanderson-Mann *et al.* (2012, p. 98-99) advise mentors to make use of the “best practice guidelines” developed for mentors as an RCN toolkit on dyslexia (Cowen, 2010a). In addition to this mentors will advisably ensure their mentoring practices are evidence-based (NMC, 2015a) and conducive to individual students learning needs (NMC, 2008) and that they do not make any comment on the students deficit, such as those that Beth referred to, as these could be perceived as derogatory.

As previously discussed, students like Adam, Eva and Freda are unlikely to disclose their dyslexia when they perceive exclusive practices with practice placements. They therefore experience what could be described as a more difficult time on placements. For example Adam describes feeling unsure of his mentor's instructions when a brief digital recording of his mentor's voice would act as an *aide memoire* For Eva the need to disappear off out of sight to check spellings on a mobile phone would be negated if this were agreed as a reasonable adjustment. Freda would have had more time for her academic work if she had not invested excessive time into writing reflective essays for her mentor where a

semi-structured reflective discussion will suffice. These are reasonable adjustments for student nurses with dyslexia in the practice placement context and will be discussed later in this chapter.

On pursuing a complaint about unsupportive mentorship and or an unsatisfactory practice placement environment the student complainant is primarily asked by the university for a Witness Statement with evidence of events. It is apparent in this study that when students are treated unfavourably because of something arising in consequence of their hidden disabilities (Great Britain. Equality Act, 2010) they are sometimes in the company of other students who are party to events and should also supply witness statements as evidence. However there is a risk that students who feel a sense of social injustice (Kinley, Sadurski and Walton, 2013) and that their human rights have been breached because of their disadvantage (Europe. Human Rights Act, 1998) will feel vulnerable and this jeopardises their capacity to pursue any formal complaint.

Mentors should be concerned for student welfare and show support for their student by advocating for those with dyslexia (NMC, 2008) and declare and show behaviours that they are worthy human beings (Europe. Human Rights Act, 1998). I found that mentors of Beth and

Doris did not appear to be advocating for their student's plight and they could do this locally by addressing the stigma associated with dyslexia:

Beth: "Oh, that woman is really, really dumb...Some people are opinionated on dyslexia...it has a stigma with stupid...Dyslexia is not stupidity, apart from the stupid people not understanding what it feels like to have these bad things said to me"

Doris: "...I am worried about being spoken badly about. I'm afraid of being judged...the stigma around the ward, "oh, she's dyslexic"...and they tar me with a brush... and I think they want us to feel bad..."

In some descriptions of lived-experience I interpreted that mentors did not engage in positive personalised interaction with their student with dyslexia. Instead it appears that mentors dominated and did not listen to Gill or Helen's needs:

Gill: "...it's difficult to actually stand up with someone who is more senior than you"

Helen: "...I feel awkward...I always feel it doesn't really mean anything to them...I always feel like they are going to get frustrated...my mentors saying, "You can do better" trying to get me motivated when I was motivated and it was all just a cycle of frustration..."You need to try harder," when I was trying my best, trying so hard, as hard as possible. I was sat there thinking "please don't fail me, I am doing as hard as I can"

Students felt that this was unsupportive and it is interpreted that their mentors did not show concern for the specific learning difficulties that students had because of their dyslexia deficit:

Eva: "I have not seen anyone able to negotiate...the mentor...set an essay...able to explain it or discuss it instead of write it down in an essay? I did ask my mentor...but this was not honoured"

Freda: "...she asking me again, again to leave to get thing for a dressing. Two other students watching...not asked...I think she constantly sending me away from her...all I really saw was the bandaging at the end...She ask me to do the other dressing and...I haven't even seen the order you want things in...I think if maybe she was want me to fail and be wrong with the two students to watch me"

I made interpretations from my research findings that some mentors appeared to ridicule their student with dyslexia. It also appeared that students in my study had lived-experiences that showcased derogatory comments that they had overheard about their dyslexia. I found that students felt that they suffered these as a consequence of their hidden disability (Great Britain. Equality Act, 2010).

Doris: "Sometimes people think "spastic" and say that kind of thing about me behind my back, and I have heard them do this"

Freda: "...I had previously heard them laugh about my blue tint glasses, they say..."Why I don't have a dog instead?"...I don't need a guide dog"

Helen: ..."behind my back..."it's just that she's a complete spastic"...It's a real eye opener, I never knew having dyslexia was such a bad thing"...

Resultantly it appeared that students with dyslexia felt excluded and I interpret that they felt discriminated against because of their dyslexia deficits (Europe. Human Rights Act, 1998: Article 14) and these apparent mentor behaviours are socially unjust (Segal, Gerdes and Steiner, 2012).

Eva: "Oh, she can't speak words,"...you have like embarrassing moments when you might have said something...not accurate, pronounce it wrong and people laugh"

Gill: "Writing my notes is slower than others. I'm still writing when they have finished and gone off to break, so I notice that I get a shorter break time"

Stage-two mentors (NMC, 2008) hold the virtuous power for a pedagogy of inclusion or exclusion (Gotsis and Grimani, 2015). Eva and Gill experienced feelings of pedagogical exclusion as their mentors (NMC,

2008) bias and prejudice toward students with dyslexia devalued them (Abrahams, Swift and Mahmood, 2015). Conversely Eva, Gill and all other people belonging to the community of students with dyslexia are entitled to an inclusive education (OHCHR, 2016). Gill's feelings of isolation and social injustice resulted from her mentors (NMC, 2008) direct disability discrimination (Europe. Human Rights Act, 1998: Article 14) which denied Gill a mentoring pedagogy of inclusion for her protected characteristic (Great Britain. Equality Act, 2010).

My fellow researchers who have studied the experiences of student nurses with dyslexia whilst on practice placements identified that one student stated "yes-experienced discrimination" (Child and Langford, 2011, p. 43) without elaboration. In Ridley's (2011) study one student had been described "thick" and felt "branded thick" (Ridley, 2011, p. 37) whilst another had been described as "stupid" (Ridley, 2011, p. 39).

Mentors are responsible for their conduct to be professional (NMC, 2015a), lawful (Great Britain. Equality Act, 2010) and anti-discriminatory (NHS Employers, 2017) enabling their function within the realms of social justice [see 2.1.7.2]. Students who are exposed to ridicule through derogatory comments are at risk of psychosomatic health ailments resulting from experiences of anxiety and stress. Such feelings will

decrease students' ability to cope and they will appear withdrawn and it also increases the risk of absences from practice placement.

Prejudice toward students with dyslexia devalues them (Abrahams, Swift and Mahmood, 2015). Mentor bias may be founded in ignorance as current peer reviewed advice to new and existing mentors does not give mention to mentoring students with dyslexia/other disability (Houghton, 2016) and the NMC (2008) standards does not educate stage-two mentors on dyslexia and neither does the NMC (2012) equality and diversity strategy make any mention of the NMC responsibilities to the education and training and regulation of registrants as mentors in inclusive education with diverse pedagogy and equitable practices.

This is highly irregular as those with dyslexia constitute a significant proportion of the student nurse population. There were 36,875 pre-registration nursing students in UK universities (HESA 2010) and when the calculation of 5 - 10% in the UK population has dyslexia (NHS Choices, 2015a) is applied, an estimated 3,687 - 7,375 of this student body were student nurses with dyslexia. Whatever the reason for mentors (NMC, 2008) not acting virtuous with a pedagogy of inclusion (Gotsis and Grimani, 2015) or acting adequately in an advocacy role for student nurses with the protected characteristic of dyslexia (Great

Britain. Equality Act, 2010), there was deep-seated disability disadvantage within the practices of healthcare workers (NHS Review of Equality and Inclusion Strategy, 2016). This was upheld by published research which shows that workers who were disabled have a significantly poorer experience of NHS work than their counterparts (Disability Rights UK, 2015).

From 2018 NHS Trusts are required to assess whether disabled staff face discrimination (NHS Review of Equality and Inclusion Strategy, 2016). However this metric does not distinguish between 'hidden disability' and 'visible disability'. There are seven million people of working age with a disability in the UK (Great Britain. Department for Work and Pensions, 2016) with an estimated 5 - 10% of the UK population has dyslexia (NHS Choices, 2015a). This calculates there to be an estimated 700,000 - 1.4 million people of working age in the UK with dyslexia. As the NHS is one of the world's largest employers, with more than 1.5 million employees (NHS England, 2016), an estimated 150,000 - 300,000 people with dyslexia work for the NHS.

Dyslexia is not defined as related to low intellectual functioning or low IQ [see 2.1.5]. However those in society without a positive diagnosis of dyslexia are unwisely susceptible to discriminate against those with

dyslexia. It is apparently usual to consider those with dyslexia as stupid or having a state of laziness to learn e.g. punctuation and spelling. Dyslexia discrimination features so highly, in some quarters of extreme ignorance, as for many believers to publically renounce its very existence. Dyslexia discrimination is not exclusive to the unwise and uneducated persons it exists amongst societies professionals, management and nurse educationalists (MS Solicitors, 2014). It was prolific amongst societies' intellectuals who have not applied their intellectual abilities into renouncing their ignorance and embarking on a journey of learning with a quest to discover for themselves; what exactly is dyslexia? Ignorance toward what dyslexia is compounds negative connotations toward the condition and increases the suffering of this marginalised group.

Many student nurses were burdened from others lifelong negative attitudes and low expectations toward them and a lack of self-confidence rooted in the manifestations of the signs and symptoms of their dyslexia (Bartlett, Moody and Kindersley, 2010). Many consider it paramount to conceal their dyslexia as literacy skills are a characteristic of nursing work. Establishing themselves as intelligent within the practice placement environment before they reveal their specific learning disability is an adaptive common compensatory technique (Singleton,

Horne and Simmons, 2009). Time and effort was thus invested into masking/hiding their dyslexic traits as they were fearful of being labelled or stigmatised by other students, staff and prospective employers (Macdonald, 2009). This perceived fear was real as Tanner (2009) found that student peers were direct in their comments about students with dyslexia using terms such as 'dumb' and 'stupid'. Additionally staff have a tendency to use negative body language mixed with indirect negative comments such as 'try harder' directed toward those with dyslexia (Tanner, 2009, p. 793).

The comorbidity of additional spectrum disorders adds to the complexity of understanding dyslexia, a challenge that society's professionals, management and educationalists are beginning to place on their agendas because of the Equality Act (Great Britain. Equality Act, 2010).

5.2.3 Equality/inequality – reasonable adjustments (needs)

Equality should be normative and fair within practice placements with stage-two mentors who are interested in the pedagogical needs of their student nurse with dyslexia (NMC, 2008) and adequate in an advocacy role toward reasonable adjustments. They should help students with dyslexia to develop coping strategies whilst on practice placement. To do this mentors should be encouraging the student to find different ways

of learning by supporting their difference and encourage the use of their enabling equipment supplied by Student Finance England via disabled students' allowances (DSA-QAG, 2016). Realities of practice placement are that student nurses with dyslexia experience mentors who are geared toward sameness or homogeneity as their frame for equality. This is unfair for the student with dyslexia as their needs for reasonable adjustments exist only because of their dyslexia deficit and they experience their stage-two mentors are treating them with constructs of inequality. Mentors are therefore perceived by students to be uninterested in student's individual pedagogical need and discouraging reasonable adjustments and purporting sameness in their teaching and assessing strategies. Resultantly students feel that their reasonable adjustment needs are not met and they find this disabling on practice placements. This phenomenon constitutes new knowledge that adds to the existing research knowledge on student nurses with dyslexia [see Table 43].

Datum-set: Adam	
Questionnaire results:-	Interview findings:-
Q. 7 (15) I disagree that at the end of my shift on practice placement I had a sense of job satisfaction.	"A mentor said to me impatiently I've shown you...just get on with it. She stood over me which is good for the patient...but is bad for me because she constantly stopped me...and I became... nervous, totally incapable...this is upsetting and I worry for the patient thinking 'this person is rubbish!' and 'what are they doing!' because 'they must be really dense and stupid, why can't they do this simple thing even with so much help!' But it's not the kind of help I needed, people don't understand...and I get dissatisfied with these kind of situations"
Q. 8 (16) I agree that my mentor often got side tracked and did not stick to the main points.	"I learnt every step-by-step way to do something so that's very deep in my learning, and then someone says, 'No, this way around.' I found that a bit distressing...I need to follow up other ways, this mentors ways...she wasn't very happy with that...I find it hard to cope on placement... It's embarrassing...it's a way I'm processing my understanding...Seen as a disability...you kind of want to be quite independent and do it yourself as well. You just think differently to other people"

Datum-set: Beth	
Questionnaire results:-	Interview findings:-
Q. 7 (15) I disagree that at the end of my shift on practice placement I had a sense of job satisfaction.	"It depends on the person who you work with...not every mentor is good...I find that everything is rushed and not completed properly. I like to ensure things are complete and finished...I still feel it might always be awkward for me...Because I need to spend more time maybe because I learn more slowly..."quicker, quicker"...wasn't what I needed...I...should...receive...help from the clinical placements"
Q. 8 (16) I agree that my mentor often got side tracked and did not stick to the main points.	"...when they show you other things, you might get mixed up a little bit...It seemed so complicated... I've got disadvantage...I...go so slowly...time to understand everything...I don't always understand what I am asked to do...Sometimes the most basic things are not explained to me... When I was in the ward, there are time I used to get away from people because it's easier to have my brain to concentrate and check"
Q. 10 (19) I strongly disagree that my mentor helped me whenever I had trouble with my work.	"...watching over me...I'm completing my patient chart, I put my finger...well, actually I need to write in a particular column, and she says to me, "Oh, stop copying," I said, I didn't copy, I just want to be sure what I write is exactly on the right place. And she said, "Oh, you're copying because you can't think...yes, you copy it because of your dyslexia"...the mentor said these bad things...I really want to be fluent with everything...I use my fingers to cover up words and letters and things when I'm reading, I try to hide this from other people's noticing...I hide the dictionary...I know it's bad but that's how I feel"
Q. 16 (35) I disagree that my mentor often planned interesting activities for me.	"Mentors can be unfair, because they don't know dyslexia and the bad effects, they want you to write up lots of case study...I know that this writing a case study would take me three weeks...Time consuming...to get it right...with worry...I said I can be a nurse I just need time... they think bad of me...it's the writing bit that's the trouble...Mentors need to be supportive and encouraging and positively view my ability and not have strong opinion that my dyslexia is a disability and...people like me can't be nurses"
Datum-set: Cathy	
Questionnaire results:-	Interview findings:-
Q. 7 (15) I strongly disagree that at the end of my shift on practice placement I had a sense of job satisfaction.	"I do struggle with too much going on at once...I really can't cope with too much noise...I always get headache...I can't concentrate...and end up struggling...When I'm on placement I find it difficult, even just simple things...compare this to other student...I find it really difficult...it is a disability...I am not aware of any reasonable adjustments in placement...I've never ever seen anyone actually use that overlay or colour glasses for seeing. It's...like looking disabled...when this happen it is unsatisfactory...I was uncomfortable every time...she say it...I think sometimes it's...something different...I do struggle. But I do tend to wear my yellow glasses in colour more in uni and off duty. I probably...cope but then I might not, if it's too much...It effects concentration...I do keep some in my pocket, but I don't get them out on placement if anyone can see me...You don't want to stand out like a sore thumb...Yea you still want to be treated like everybody else"
Q. 8 (16) I agree that my mentor often got side tracked and did not stick to the main points.	"...it...affects some things that I'm doing...I struggle with some of the learning...the order mentors want things written down...I feel lost...It's terrible, lots of time wasted...it's disorganised on the ward, I'll be asked by my mentor to do one thing, and I make a start on it and then I'm side tracked off to do something else. I feel as if things don't get finished the way they should... it doesn't make sense...just need more time..."
Q. 10 (19) I strongly disagree that my mentor helped me whenever I had trouble with my work.	"I kind of use my own initiative it's all like learning how to do it yourself...I work it out in my head if I can step by step and do it slowly bit by bit to get it correct...my mentor when she discover, I had a problem understanding, she would say...I am expected to work the same as the others...I always have to pay careful attention to what the mentor and qualified nurses are saying...I would have to try and ask them again...Sometimes...I will really struggle with it...I'm so out-of-sync with it...I can get things wrong a million different ways"
Q. 16 (35) I strongly disagree that my mentor often planned interesting activities for me.	"Tape record the handover is my idea and get the nurse to listen again to the patients allocated for their shift, when I suggest this the mentor didn't even try to put this idea forward...Films of clinical procedures...this would really help me, but I have never seen anyone on placement use this way of teaching...set it up so we can film her and have a copy to see again and again...I have put this idea forward and it is rejected"
Datum-set: Doris	
Questionnaire results:-	Interview findings:-
Q. 7 (15) I strongly disagree that at the end of my shift on practice placement I had a sense of job satisfaction.	"It's frustrating at times...every day is a struggle...it's overwhelming...I can't do it! I can't do it! My brain feels like it's going to explode...I worry about the order of what I've written as I find it hard to organise a flow...I have memory problems...short term memory, and getting new things learnt into my brain...I just have to get on with it...Just do what you can do and manage"
Q. 8 (16) I strongly agree that my mentor often got side tracked and did not stick to the main points.	"I've found that everyone does things completely different...it's just the way they've always done it...I struggle with that...if someone explains to me...we need to do this because...I can connect in my mind and realise why they're doing it that way...I like to find connections make sets and find patterns, this helps me to learn...I like to look things up on the computer to understand the steps of how to do something as it helps with my eyes shut when I see things if I know each step, the importance behind it...knowledge...I think that is a dyslexia thing, linking a structure to follow"
Q. 10 (19) I strongly disagree that my mentor helped me whenever I had trouble with my work.	"I have got dyslexia just so you know. I'm a bit slower with things like this...everything is rushes, hurried and too fast...let me learn at my own pace...she really didn't understand it. She said, "what does that mean then...the ones who are a bit naughty would always be tested"...I wish I had challenged her...Disability, it doesn't mean that you are not doing to succeed. But being 'Dis-something' it is like being 'dysfunctional' and it sounds bad. Because dyslexia is not visible to others, people are not expecting to have it before them someone"

	who is intelligent enough to be a degree student, intelligent enough to be a nurse, but then they get in a muddle and can't spell and can't say words right and seemingly can't read or understand instructions which I know is not a good thing...I don't like doing things wrong, because one silly little mistake is bad...I worry what people will think and do when they know about me...I try to not let it bother me...a lot of the nurses don't talk to the students ...your...time on placement it's all alien to you"
Q. 16 (35) I strongly disagree that my mentor often planned interesting activities for me.	"Well it does affect me but...We're still the same as everyone else. I've just got dyslexia; I'm just a bit different...I didn't want her to give me jobs that she thinks I can't cope with...bring yourself forward a bit, this does take a lot of effort for me, but it's how I make sure I'm involved...I always try and make it clear that it doesn't affect how clever I am. It's just that I might do things a bit slower sometimes...Things take me longer...to do notes because I'm constantly...either checking...looks like I'm on my phone but I'm checking words and spelling"
Datum-set: Eva	
Questionnaire results:-	Interview findings:-
Q. 7 (15) I disagree that at the end of my shift on practice placement I had a sense of job satisfaction.	"It worries me when I have to write things out...when someone is next to me, and they're dictating something to me and I have to write it down, that's when I get worried...I just keep praying they give me things I could spell...just put things in a simple way...I get embarrassed...can you document accurately enough, correctly enough...this make me very angry and I'm thinking...If I'm alone, and I have time to spell things out, I'm fine...spelling a lot is the problem...that makes me really anxious...I think I do struggle with confidence a lot, self-esteem is low"
Q. 8 (16) I strongly agree that my mentor often got side tracked and did not stick to the main points.	"When my mentors give me tasks to do, I remember certain things, but it's just if I have too much to remember, I will forget quite a lot, there's a bit of embarrassment as well...I think dyslexia affects my memory quite a bit, quite embarrassing...all of the time searching for something to pin reasoning onto...I have to go calm and slow...I am not stupid...my brain switches it all around in this mess! I get so confused...I have to concentrate more than others. I have to write everything down and I have to concentrate without being interrupted for me to concentrate thoroughly and do everything correctly. This takes longer than others but what I do is comprehensive. It's complete with nothing left out and no mistakes"
Q. 10 (19) I disagree that my mentor helped me whenever I had trouble with my work.	"I've struggled...I bring the highlight pen to hand, always with me...It's a bit more subtle I think...I have all the important things being highlighted...I do have overlay...I use at home and uni but I don't really want to take it on placement with me...I got this big blue overlay out...they're going, "Oh, why've you got that?"...everyone pointing you out"
Q. 16 (35) I strongly disagree that my mentor often planned interesting activities for me.	"I want to see it lots of time to bank it in my mind to remember it all...And I find out it's hard for me to remember what I learned...I tend to do a lot or I do self-learning, look back at it myself...If I really want to study something deep, it's not enough for me to just read once I need to go back a few times...I need to spend a lot of time to gain knowledge from reading...for me it's easy to remember and learn saying, seeing and doing rather than seeing reading. It's better if I listen to reading. The best is to see a VodCast on the VLE over and over and over as many times as I need"
Datum-set: Freda	
Questionnaire results:-	Interview findings:-
Q. 8 (16) I agree that my mentor often got side tracked and did not stick to the main points.	"I don't find that things are clearly planned or organised, most things do seem to be rather disorganised...I don't like explain this to others, it embarrassing and make me stand out...More planning and better instruction to juniors on who is to do what and when would improve the way tasks are carried out"
Q. 10 (19) I disagree that my mentor helped me whenever I had trouble with my work.	"I find it quite hard at the hospital mandatory e-learning. There is no option to read the question out loud in audio or to colour the computer background from white to blue. That quite hard in test conditions when I cannot ask people to read it out loud to me. The hospital are not helping with people with dyslexia...it be so much helpful if there is an option to read questionnaire into earphone. None of these assessment needs are negotiated on placement...it will be better if you are in the computer room and there is a librarian there and you would have the time to do it. Time is an issue, because in uni we have more time for tests and exams but on placement the computer logs you off at the same time as all the others whether or not you are finished the test"
Q. 16 (35) I disagree that my mentor often planned interesting activities for me.	"I have never been asked what my preferred learning style is...I have to work things out in my head and visualise it, actually see it with my eyes closed...Mentors all do things their own way...have their own way and this is confusing for me with dyslexia...It would be helpful when I freeze for them to say 'Please go and think and come back when you remembered.' Give me some time and understanding...It's only my brain freeze and with the stress it's worse... sometimes I don't remember anything, for example, today I need to write about this new medication, but after I finish my working shift...it's gone. I remember it was something to write about, but I can't remember what, I search but my brain is empty. For me it essential that I make a note at the time, then I can look it up"
Datum-set: Gill	
Questionnaire results:-	Interview findings:-
Q. 7 (15) I disagree that at the end of my shift on practice placement I had a sense of job satisfaction.	"Sometimes I do think in different ways. The way I think is muddled up, it's not the same way everyone else lays things out...I may be slightly slow in writing and knowing exactly the right terms to use when I'm documenting things around patient's care...Whether it was because I was too slow for them, they've got experience...not realising...I would try and hurry up but if I do make a mistake then, what's going to happen?...Maybe you got a time limit for certain things... they know better...I haven't got the experience they have...when I finish I want someone to check it"

Q. 8 (16) I strongly agree that my mentor often got side tracked and did not stick to the main points.	...“someone has explained something for me and then instantly, half of it is gone, then I don't know what I am supposed to be doing to help...nobody gives me time to understand what's happening with the patients...It affect my confidence a lot, especially I find it difficult to cope with multiple things...It's all done very quickly...so I manage to carry on and just try and adapt and work along those who are able to”
Q. 10 (19) I disagree that my mentor helped me whenever I had trouble with my work.	...“learning new things, it takes me a long time. I can learn new things but then, I can easily just forget them...My visual, I can just visualise someone was doing this and that and that. But if it's something in writing, I need to read it through many, so many times...I'll try and adapt to what they want and how they want their things done”
Q. 16 (35) I strongly disagree that my mentor often planned interesting activities for me.	“It means a lot for mentors to understand that if a student comes up and mention that they've got dyslexia, they should be able to help us out, just to spend some time with us...I think we can find a way around...The mentors should receive training for students who have learning needs such as dyslexia. They need that training, so they can understand for those students, to see how they feel about it, that to give that support for those student. They could learn how to plan teaching and assessing activities conducive for student with dyslexia...it's only made up of someone focusing and someone absorbing things in a different way”
Datum-set: Helen	
Questionnaire results:-	Interview findings:-
Q. 7 (15) I strongly disagree that at the end of my shift on practice placement I had a sense of job satisfaction.	“I used...a digital recorder...When I started to record the handover on...placement I was told that I can't do this...why can't I use my recorder to enable me? But instead I have to do the same as everyone else and write notes on a piece of paper. I can't keep up with the speed of the handover and most of the vital information is missing for me. So I am expected to work at the same pace and in the same way as others and at their pace rather than proceeding at my own pace. I think people with dyslexia should use the equipment that they normally use to make life easier as a reasonable adjustment on the placement. That needs sorting out, as a student they don't listen to me. They just say “You can't” there should be room to manoeuvre”
Q. 10 (19) I disagree that my mentor helped me whenever I had trouble with my work.	...“it takes me a while to grasp the concept. I have to really install it in my head a couple of times...People doing that face where it's, “Come on now, and pull your finger out.” And I'm like, “I am,” and they don't believe me...I get so angry with myself...I mean, frustration with myself, because I've tried really hard...I learn visually, I like to watch lots of times...I'd rather set up on my own with the patient in my own time and then have my mentor come back to check...But I don't think that's possible...I like structure and organised routine and process and procedures...I put in a lot of time and effort into everything. I think it's because I was thinking how they're going to react if I don't get it right...Where's that constructive criticism...Not like uni...where I got spoken to about it and helped...why don't you help...rather than bitching...I did not manage to feel strong enough to give my opinion”
Q. 16 (35) I disagree that my mentor often planned interesting activities for me.	“Having dyslexia and going out on placement...it's just they have their own way and that's it...I'll be with one nurse one day, and I'll do it this way, this is the better way, and another day another one claims it's the right way...I want to know the right way and the best way. It's all confusing... there is always different approaches to see the same thing! It's interesting just to observe how many different ways people come up with!...I prefer to have a routine and know more or less what is going to predictable happening”
Collective descriptive analysis:	Collective interview interpretative phenomenological analysis:
Q. 7 (15) 87.5% <i>n</i> =7 strongly disagree/disagree that at the end of my shift on practice placement I had a sense of job satisfaction.	Superordinate theme;
Q. 8 (16) 87.5% <i>n</i> =7 strongly agree/agree that my mentor often got side tracked and did not stick to the main points.	<ul style="list-style-type: none"> Reasonable Adjustments
Q. 10 (19) 87.5% <i>n</i> =7 strongly disagree/disagree that my mentor helped me whenever I had trouble with my work.	Subordinate themes:
Q. 16 (35) 87.5% <i>n</i> =7 strongly disagree/disagree that my mentor often planned interesting activities for me.	<ul style="list-style-type: none"> Equality (should be normative and fair) Inequality (reality unfair treatment)
	Please note that all of the participants' interview findings in Table 43 are precise extracts from their transcript as shown. They are intentionally being left as it was described in the original and every citation is presented <i>sic erat scriptum</i> . In view of this I have elected not to highlight each grammatical or usage mistake followed by [<i>sic</i>].

Table 43 - findings on equality/inequality and reasonable adjustment needs

5.2.3.1 Discussion - what did it feel like on practice placement?

Dyslexia is a neurological condition [see 2.1] and students with dyslexia have specific learning needs (Great Britain. Equality Act, 2010) as

individual learners (NMC, 2008) along with the need for specific individual reasonable adjustments (Equality and Human Rights Commission, 2016e) to enable their learning in university (DSA-QAG, 2016). Reasonable adjustments (Equality and Human Rights Commission, 2016a) for student nurses with dyslexia include the use of auxiliary aid equipment (DSA-QAG, 2016) which was required, for enablement, as a direct result of the effect of their disability e.g. Auxiliary aid equipment for poor or inconsistent spelling: Handheld dictionary equipment in the form of an e-dictionary with audible spelling via mobile telephone technology, to access correct spellings for written documentation on patient care. The absence of an auxiliary aid puts a disabled person at a 'substantial disadvantage' (Great Britain. Equality Act, 2010, s.212(1)) [see Table 44] compared with people who are not disabled. (Department for Work and Pensions, 2016).

Employers are required to take reasonable steps for employees with dyslexia to:	Equality Act (2010)
<i>"Avoid the substantial disadvantage where a provision, criterion or practice applied by or on behalf of the employer puts a disabled person at a substantial disadvantage compared to those who are not disabled [e.g. The employer allows a disabled person to work flexible hours to enable additional breaks to overcome fatigue arising from the disability]."</i>	s.20(3)
<i>"Provide an auxiliary aid (which includes an auxiliary service) where a disabled person would, but for the provision of that auxiliary aid [e.g. text to speech software], be put at a substantial disadvantage compared to those who are not disabled"</i>	s.20(5)
<i>"Ensure that the information is provided in an accessible format; for example, providing letters, training materials or recruitment forms on audio-tape [e.g. instructions for people with learning disabilities might need to be conveyed orally with individual demonstration or in Easy Read; and alteration to the standard workplace training to reflect the worker's particular disability".</i>	s.20(6)

Table 44 - Equality Act (2010) on substantial disadvantage (s.2D-3), auxiliary aids (s.2D-5) and accessible information (s.2D-6)

Following the Equality Act (Great Britain. Equality Act, 2010) student nurses should not experience feelings of inequality in their practice

placements. This means that students with the protected characteristic of dyslexia (Equality and Human Rights Commission, 2011b) should experience mentoring pedagogy with mentors who the students feel are interested in and support their personalised specific learning needs (NMC, 2008). However, in my study I interpreted my findings from the descriptions of the students' lived-experiences to show that students' feel they are not satisfied that this is taking place within the culture of practice placements. Cathy described what I interpret to be feelings of inequality in the mentorship she experienced as she appeared to feel that her mentor was not interested in supporting her when she had difficulties with her understanding instructions. The Royal Society (2011) advise that it is possible to identify the neuro-cognitive barriers to learning (Royal Society, 2011). I therefore suggest that it may be that Cathy's dyslexia deficit was primarily auditory processing [see 2.1.5.1 and see Table 5; 2.1.7] but apparently it appeared to Cathy that her mentor had expectations that she would understand what she was being asked to do if she listened to the instruction she was given:

Cathy: "...my mentor when she discover, I had a problem understanding, she would say...I am expected to work the same as the others...I always have to pay careful attention to what the mentor and qualified nurses are saying...I would have to try and ask them again"

Doris appeared to feel dissatisfied that her mentor expected her to get on with her work and in their research Walker *et al.* (2013, p. 52) found that healthcare professionals had a lack of knowledge on "how best to

support the student with record keeping.” A knowledge deficit on the condition that is dyslexia could have been an issue for Doris’ mentor [see 5.2.1.1]. Doris’ dyslexia deficit might have resulted in problems with her short-term memory [see Table 5; 2.1.7] which impacted her organisational skills within her documentation and also may account for the problems she experienced learning new information:

Doris: “I worry about the order of what I’ve written as I find it hard to organise a flow...I have memory problems...short term memory, and getting new things learnt into my brain...I just have to get on with it...Just do what you can do and manage”

Although Gill also described short term memory problems she appeared to feel that she was not being given the support that she required from her mentor to organise her workload and it is my interpretation that she erroneously thought that she had to adapt to herself to work in the same way as others [see 5.2.2]. However, with reasonable adjustments of digitally recording an *aide memoire* of the mentor’s explanation Gill may have been able to function effectively in the environment:

Gill: ...“someone has explained something for me and then instantly, half of it is gone, then I don’t know what I am supposed to be doing to help...nobody gives me time to understand what’s happening with the patients...especially I find it difficult to cope with multiple things...It’s all done very quickly...so I manage to carry on and just try and adapt and work along those who are able to”

Beth appeared to describe her lived-experience with her dyslexia as disadvantageous in that she seemingly compared the lesser speed of her comprehension with others. She appears to describe retiring to a quieter area to enable her learning and uses this strategy as a coping

mechanism. It may be that her dyslexia deficit is worse within a noise filled environment [see 2.1.5.1]:

Beth: ...“when they show you other things, you might get mixed up a little bit...It seemed so complicated... I’ve got disadvantage...I...go so slowly...time to understand everything...I don’t always understand what I am asked to do...Sometimes the most basic things are not explained to me... When I was in the ward, there are time I used to get away from people because it’s easier to have my brain to concentrate and check”

Gill appears to describe what I interpret to be a short-term working memory deficit [see Table 5; 2.1.7] along with difficulty with reading that is likely a core dyslexia deficit of a visual-spatial disorder [see 2.1.5.2 and Table 5; 2.1.7]. Once again she appears to describe the same perceived expectation to adapt to her environment:

Gill: ...“learning new things, it takes me a long time. I can learn new things but then, I can easily just forget them...if it’s something in writing, I need to read it through many, so many times...I’ll try and adapt to what they want and how they want their things done”

Findings from a fellow researcher show that other students with dyslexia just like Gill “situate themselves on a level playing-field” (Ridley, 2011, p. 41) with those who do not have a dyslexia deficit. However, it is not their responsibility to do so as disability law is clear (Great Britain. Equality Act, 2010) that dyslexia is a protected characteristic (Equality and Human Rights Commission, 2011b). Therefore the adaptation must be organisational with the equality duty for the workplace to provide enabling reasonable adjustments for individuals (Equality and Human Rights Commission, 2011b) including students on practice placements (Equality and Human Rights Commission, 2016d). The onus is not the

individual adapting to the organisational environment as this may not be possible and is therefore unfair (Equality and Human Rights Commission, 2011a).

In their research findings Dearnley *et al.* (2010, p. 4) describe practice placements as having “a culture that subordinated their needs [students with dyslexia]...to the organization”...and “users of their services [patients]”. They go on to explain that within the NHS culture ‘the patient comes first’ mitigates against constructs of inclusivity for disabled students and workers (Dearnley *et al.*, 2010, p. 5) and “the disabled feel that their own needs are unimportant to the organization” (Dearnley *et al.*, 2010, p. 5). My interpretation of Gill’s descriptions of her own lived-experience and feelings appear to elude to this identified culture.

It is my interpretation that Helen describes a lived-experience that would benefit from a supportive mentor intervention. She appears to be struggling with sequencing details within clinical skills and good mentoring pedagogy will direct her to the UK nationally agreed guidelines in the Royal Marsden Manual of Clinical Nursing Procedures (Dougherty and Lister, 2015) for evidence-based practice (NMC, 2015a)

Helen: “Having dyslexia and going out on placement...it’s just they have their own way and that’s it...I’ll be with one nurse one day, and I’ll do it this way, this is the better way, and another day another one claims it’s the right way...I

want to know the right way and the best way. It's all confusing... there is always different approaches to see the same thing! It's interesting just to observe how many different ways people come up with!...I prefer to have a routine and know more or less what is going to predictable happening"

The students with dyslexia in my study appear to feel some mentorship involves those who are not interested in students' rights to equal learning opportunities (Equality and Human Rights Commission, 2016e).

The students described dissatisfaction with their practice placement environment and this appeared to be because they felt that the mentoring pedagogy culture was not supporting their personalised specific learning needs. I interpreted my study findings to show that instead of being supportive the mentorship practices were geared toward homogeneity or sameness which the students felt was unsatisfactory:

Beth: "Mentors can be unfair, because they don't know dyslexia and the bad effects, they want you to write up lots of case study...I know that this writing a case study would take me three weeks...Time consuming...to get it right...with worry...I said I can be a nurse I just need time... they think bad of me...it's the writing bit that's the trouble"

Doris: "Well it does affect me but...We're still the same as everyone else. I've just got dyslexia; I'm just a bit different...I didn't want her to give me jobs that she thinks I can't cope with...I always try and make it clear that it doesn't affect how clever I am. It's just that I might do things a bit slower sometimes...Things take me longer...to do notes because I'm constantly...either checking...looks like I'm on my phone but I'm checking words and spelling"

Gill: "Sometimes I do think in different ways. The way I think is muddled up, it's not the same way everyone else lays things out...I may be slightly slow in writing and knowing exactly the right terms to use when I'm documenting things around patient's care...Whether it was because I was too slow for them, they've got experience...not realising...I would try and hurry up but if I do make a mistake then, what's going to happen?"

In Sanderson-Mann *et al.*'s (2012, p. 94) research study Doris's and Gill's description of feeling "different" was also a finding from within the participants accounts. Sage-two and stage-four mentors (NMC, 2008) have a role in championing neurodiversity as a positive attribute within the healthcare team on practice placements.

Equality for those with a hidden disability or physical deficit (Equality and Human Rights Commission, 2011a) should be described by students with dyslexia. I interpreted that my findings showed mentoring pedagogies described through the students lived-experiences actually appeared to bring about experiences of inequality and feelings associated with disablement in the context of their practice placements:

Adam: "I learnt every step-by-step way to do something so that's very deep in my learning, and then someone says, "No, this way around." I found that a bit distressing...I need to follow up other ways, this mentors ways...she wasn't very happy with that...I find it hard to cope on placement... It's embarrassing...it's a way I'm processing my understanding...Seen as a disability...you kind of want to be quite independent and do it yourself as well. You just think differently to other people"

Beth "Mentors need to be supportive and encouraging and positively view my ability and not have strong opinion that my dyslexia is a disability and...people like me can't be nurses"

Doris: "I have got dyslexia just so you know. I'm a bit slower with things like this...everything is rushes, hurried and too fast...let me learn at my own pace...she really didn't understand it. She said, "what does that mean then...the ones who are a bit naughty would always be tested"...I wish I had challenged her...Disability, it doesn't mean that you are not doing to succeed. But being 'Dis-something' it is like being 'dysfunctional' and it sounds bad. Because dyslexia is not visible to others, people are not expecting to have it before them someone who is intelligent enough to be a degree student, intelligent enough to be a nurse, but then they get in a muddle and can't spell and can't say words right and seemingly can't read or understand instructions"

which I know is not a good thing...I don't like doing things wrong, because one silly little mistake is bad...I worry what people will think and do when they know about me...I try to not let it bother me...a lot of the nurses don't talk to the students ...your...time on placement it's all alien to you"

In their research Walker *et al.* (2013, p. 53) warn that “there is inherent danger in assuming that the only qualities disabled people can offer are those of inconvenience” and in findings by another of my fellow researchers one student aptly stated “I am not disabled...I am differently able...it's part of who I am” (Ridley, 2011, p. 39). The same researcher recommends that stage-four lecturer/practice educators (NMC, 2008) should advisably to be “more challenging on constructs of individuals beliefs on disability” (Ridley, 2011, p. 41). This is a view that has my support and as a nurse educationalist I pledge that I will endeavour to make appropriate challenges with the mentors within the partnership practice placements in the NHS healthcare providers that fall within my link-lecturer remit (Knowles, 2007).

In her description of lived-experience Beth states that “mentors need to be supportive and encouraging and positively view my ability and not have strong opinion that my dyslexia is a disability and...people like me can't be nurses”. Walker *et al.* (2013 with Dearnley *et al.*, 2010, p. 4) examined the perceived risk to patient care in their study and found that “within the NHS there are misconceptions about disability and disabled people,” because although clinical staff members “felt they had valid

concerns” (Walker *et al.*, 2013, p. 53) there was not any actual risk to patients when being cared for by a nurse with dyslexia. This is supported by a USA study where managers of nurse registrants with disabilities rated their general job performance as 72% exceptional or above average and 17% average (Wood and Marshall, 2010).

In terms of fairness for student nurses with dyslexia and in due regard toward their opportunities to learn, individualised reasonable adjustments should be made (Equality and Human Rights Commission, 2011a and 2016a). According to the student’s descriptions of lived-experience along with my interpretation of these the students’ in my study feel that their practice placement experience is not a fair one:

Beth: ...“watching over me...I’m completing my patient chart, I put my finger...well, actually I need to write in a particular column, and she says to me, “Oh, stop copying,” I said, I didn’t copy, I just want to be sure what I write is exactly on the right place. And she said, “Oh, you’re copying because you can’t think...yes, you copy it because of your dyslexia”...the mentor said these bad things...I really want to be fluent with everything...I use my fingers to cover up words and letters and things when I’m reading, I try to hide this from other people’s noticing...I hide the dictionary...I know it’s bad but that’s how I feel”

Eva: “It worries me when I have to write things out...when someone is next to me, and they’re dictating something to me and I have to write it down, that’s when I get worried...I just keep praying they give me things I could spell...just put things in a simple way...and I’m thinking...If I’m alone, and I have time to spell things out, I’m fine...spelling a lot is the problem...that makes me really anxious...”

Freda: “I find it quite hard at the hospital mandatory e-learning. There is no option to read the question out loud in audio or to colour the computer background from white to blue. That quite hard in test conditions when I cannot ask people to read it out loud to me. The hospital are not helping with people with dyslexia...it be so much helpful if there is an option to read

questionnaire into earphone. None of these assessment needs are negotiated on placement...it will be better if you are in the computer room and there is a librarian there and you would have the time to do it. Time is an issue, because in uni we have more time for tests and exams but on placement the computer logs you off at the same time as all the others whether or not you are finished the test”

Helen: ...”it takes me a while to grasp the concept. I have to really install it in my head a couple of times...People doing that face where it’s, “Come on now, and pull your finger out.” And I’m like, “I am,” and they don’t believe me...I get so angry with myself...I mean, frustration with myself, because I’ve tried really hard... Where’s that constructive criticism...Not like uni...where I got spoken to about it and helped...”

Allowing extra time for work-based learning and tests is available within the guidelines from the Department for Work and Pensions (Great Britain. Department for Work and Pensions, 2016) and Freda raises the issue of there being no reasonable adjustments made available for her to complete her mandatory hospital e-learning test. A culture of active reasonable adjustment arrangements should be the norm for students in the practice placement environment. They should have mentors who advocate for them to have reasonable adjustments put in place that meet their specific learning needs (Cowen, 2010a). The interpretation of my findings shows that whilst Cathy showed self-awareness in relation to her dyslexia deficit her mentor did not appear to engage with advocacy toward promoting her reasonable adjustment in a positive way. Were her mentor to have advocated for her need then the Cathy’s experience of practice placement might have been greatly improved upon:

Cathy: "I...am not aware of any reasonable adjustments in placement...I've never ever seen anyone actually use that overlay or colour glasses for seeing. It's...like looking disabled...when this happen it is unsatisfactory...I was uncomfortable every time...she say it...I think sometimes it's...something different...I do struggle. But I do tend to wear my yellow glasses in colour more in uni and off duty. I probably...cope but then I might not, if it's too much...It effects concentration...I do keep some in my pocket, but I don't get them out on placement if anyone can see me...You don't want to stand out like a sore thumb...Yea you still want to be treated like everybody else"

Another researcher in my field advised that sage-two and stage-four mentors (NMC, 2008) should adopt "advisory role" for students with dyslexia (Child and Langford, 2011, p. 43). This brings clarity to the role of the link-lecturer (Knowles, 2007) in supporting the mentors at the partnership practice placements providers that fall within their remit to develop this skill.

Mentors should support and encourage the use of the students enabling equipment supplied by Student Finance England via disabled students' allowances (DSA-QAG, 2016). I interpret my findings from the students' descriptions of their lived-experiences in my study to show that students feel that mentors are not actively supporting and encouraging them to use this equipment within the 50% practice component of their university coursework (NMC, 2010). Research by Tee and Cowen (2012) found that reasonable adjustments are less flexible in practice placements than they are in the university. However they do not elaborate on whether this

is because of the student's reluctance to disclose their disability and visibly make use of their reasonable adjustment or due to other matters.

In some of the students' descriptions it appears that they feel their mentors and others within the practice placement are actually discouraging them from using their specialist equipment:

Eva: "I've struggled...I bring the highlight pen to hand, always with me...It's a bit more subtle I think...I have all the important things being highlighted...I do have overlay...I use at home and uni but I don't really want to take it on placement with me...I got this big blue overlay out...they're going, "Oh, why've you got that?"...everyone pointing you out"

Helen: "I used...a digital recorder...When I started to record the handover on...placement I was told that I can't do this...why can't I use my recorder to enable me? But instead I have to do the same as everyone else and write notes on a piece of paper. I can't keep up with the speed of the handover and most of the vital information is missing for me. So I am expected to work at the same pace and in the same way as others and at their pace rather than proceeding at my own pace. I think people with dyslexia should use the equipment that they normally use to make life easier as a reasonable adjustment on the placement. That needs sorting out, as a student they don't listen to me. They just say "You can't" there should be room to manoeuvre"

In their research (Walker *et al.*, 2013) found that those with a disability fear that their individual reasonable adjustments may be negatively viewed by others. Colleagues may perceive the reasonable adjustment as raising issues on whether or not they actually have ability to perform effectively. They found further negativity from staff situated in practice placements within the NHS healthcare providers as reasonable adjustments viewed as "special treatment" (Walker *et al.*, 2013, p. 51). However 50% of their participants stated that they did not know enough

about reasonable adjustments for students (Walker *et al.*, 2013, p. 52) which may account for this derogatory attitude.

In Ridley's study (2011, p. 41) she also found that a student needed to "digitally record handover" as a reasonable adjustment. However concerns over use of audio-recordings of embarrassment and breaches of confidentiality prevented them from doing so. Ridley (2011, p. 42) advised that stage-two mentors and stage-four lecturer/practice educators (NMC, 2008) should "explore cultural institutional attitudes." The enablement of digitally recording the handover can be examined within constructs of the Data Protection Act (Great Britain. Data Protection Act, 1998) and the audio recording can be wiped from the device before the student leaves the practice placement environment at the end of the shift at the time when the handwritten handover notes are equally destroyed.

In their research Sanderson-Mann *et al.* (2012, p. 93) also found that students with dyslexia did not want "visible" support to avoid feeling different. These may be in attempt to preserve their self-identity as a non-disabled person (Holland and Lachicotte, *in* Daniels, Cole and Wertsch, 2007) which some students are successful with by non-disclosure of their hidden disability. However, hiding one's disability

characteristics may impact negatively on one's sense of personhood (Stanley *et al.*, 2011) [see 5.2.1]. Instead student embarrassment to disclose and use their reasonable adjustments in the practice placement can be addressed through the stage-two mentors and stage-four lecturer/practice educators (NMC, 2008) advocating for the individual students reasonable adjustment in the use of an enabling digital recording of the handover (Equality and Human Rights Commission, 2016a).

The Royal Society (2011) advise that it is necessary to identify the specific barriers to learning for individuals, and find alternative pedagogy. Following a mentor's assessment regarding the students personalised specific learning needs, which is to be undertaken in partnership with the student (Cowen, 2010a; Equality and Human Rights Commission, 2016c) the mentor-student relations should therefore develop further into finding physical strategies that prevent potential barriers to the students learning. The focus on these coping strategies is to find mechanisms that prevent putting the student in a disadvantaged position (Great Britain. Equality Act, 2010). Feeling disadvantaged in practice placements was equally a finding in Sanderson-Mann *et al.*'s (2012) research and stage-four mentors (NMC, 2008) have a responsibility to support the mentors individualised assessments of their

students in practice placements and to minimise students' experiences of inequality by championing their reasonable adjustments through effective mentor advocacy.

The students in my study did not appear to describe lived-experiences where they felt satisfied with the events that happened within the practice placement environment. They appear to describe a culture where mentors have not engaged with any supportive assessment or planning for their individual reasonable adjustment needs despite students apparently being clear on what it is that they need:

Eva: "...I find out it's hard for me to remember what I learned...I tend to do a lot or I do self-learning, look back at it myself...If I really want to study something deep, it's not enough for me to just read once...I need to spend a lot of time to gain knowledge from reading...for me it's easy to remember and learn saying, seeing and doing rather than seeing reading. It's better if I listen to reading. The best is to see a VodCast on the VLE over and over and over as many times as I need"

Freda: "I have never been asked what my preferred learning style is...I have to work things out in my head and visualise it, actually see it with my eyes closed...Mentors all do things their own way...have their own way and this is confusing for me with dyslexia...It would be helpful when I freeze for them to say 'Please go and think and come back when you remembered.' Give me some time and understanding...It's only my brain freeze and with the stress it's worse...sometimes I don't remember anything, for example, today I need to write about this new medication, but after I finish my working shift...it's gone. I remember it was something to write about, but I can't remember what, I search but my brain is empty. For me it essential that I make a note at the time, then I can look it up"

Mentors should help students to embrace their difference and support them in developing coping strategies for successful learning (Equality and Human Rights Commission, 2016b). They should support their

student in trying out various adjustments to seek effective pedagogy and enablement for learning (Cowen, 2010a). This is achieved by encouraging their student to explore different options. This can be repeatedly done until the student considers that with that particular adjustment in place they feel a sense of equal opportunity for their learning as opposed to feeling a sense of unequal treatment, disadvantage and obstacles toward their learning experience (Great Britain. Equality Act, 2010).

The students in my study did not appear to describe any lived-experiences where they felt mentors jointly helped them to discover and support them in implementing a range of reasonable adjustments or any mentor-student partnership in the evaluation of the effectiveness of this pedagogy. However they do have many self-enabling ideas:

Cathy: "Tape record the handover is my idea and get the nurse to listen again to the patients allocated for their shift, when I suggest this the mentor didn't even try to put this idea forward...Films of clinical procedures...this would really help me, but I have never seen anyone on placement use this way of teaching...set it up so we can film her and have a copy to see again and again...I have put this idea forward and it is rejected"

Doris: "I've found that everyone does things completely different...it's just the way they've always done it...I struggle with that...if someone explains to me...we need to do this because...I can connect in my mind and realise why they're doing it that way...I like to find connections make sets and find patterns, this helps me to learn...I like to look things up on the computer to understand the steps of how to do something as it helps with my eyes shut when I see things if I know each step, the importance behind it...knowledge...I think that is a dyslexia thing, linking a structure to follow"

Freda: "I don't find that things are clearly planned or organised, most things do seem to be rather disorganised...I don't like explain this to others, it embarrassing and make me stand out...More planning and better instruction to juniors on who is to do what and when would improve the way tasks are carried out"

Mentors also have a supportive role in monitoring the sustainability of the reasonable adjustment arrangements. This is undertaken by ensuring that the adjustments are available to the student whilst they are on duty in their placement whether or not the mentor is working directly with them (Equality and Human Rights Commission, 2016b). These mentoring activities are a good investment of resources in preparation for the students' future as a nurse registrant employed in the healthcare workforce (Equality and Human Rights Commission, 2016d). The students' lived-experiences described in my study apparently failed to show that the students felt there was any mentor support for personalised learning strategies and they apparently they felt that reasonable adjustments were not discussed or enabled by their mentors:

Adam: "A mentor said to me impatiently I've shown you...just get on with it. She stood over me which is good for the patient...but is bad for me because she constantly stopped me...and I became... nervous, totally incapable...this is upsetting and I worry for the patient thinking "this person is rubbish!" and "what are they doing!" because "they must be really dense and stupid, why can't they do this simple thing even with so much help!" But it's not the kind of help I needed, people don't understand...and I get dissatisfied with these kind of situations"

Beth: "It depends on the person who you work with...not every mentor is good...I find that everything is rushed and not completed properly. I like to ensure things are complete and finished...I still feel it might always be awkward for me...Because I need to spend more time maybe because I learn more slowly..."quicker, quicker"...wasn't what I needed...I...should...receive...help from the clinical placements"

Gill: "It means a lot for mentors to understand that if a student comes up and mention that they've got dyslexia, they should be able to help us out, just to spend some time with us...I think we can find a way around...The mentors should receive training for students who have learning needs such as dyslexia. They need that training, so they can understand for those students, to see how they feel about it, that to give that support for those student. They could learn how to plan teaching and assessing activities conducive for student with dyslexia...it's only made up of someone focusing and someone absorbing things in a different way"

I interpret my findings to show that the students with dyslexia descriptions of lived-experience appear to show feelings toward the context of practice placements as one of dissatisfaction. They appear to describe mentors who are erroneously championing sameness as fairness (Equality and Human Rights Commission, 2011a and 2016a). Mentors apparently function within a culture of disinterest in supporting their students personalised specific learning needs. These ways of working are contrary to employment law (Equality and Human Rights Commission, 2011b) under the Equality Act (Great Britain. Equality Act, 2010) and therefore a breach of their professional code (NMC, 2015).

According to the students' descriptions of their lived-experiences in my study it appears that they feel that their reasonable adjustment entitlements are not actively in place (Equality and Human Rights Commission, 2016d). I interpret my study findings to mean that the students with dyslexia experience feelings of disablement as opposed to

feelings of enablement in their practice placement learning activities (Great Britain. Equality Act, 2010).

There are mixed messages published by the NHS regarding dyslexia. On the NHS Choices (2015b) world-wide-web site dyslexia is recognised as requiring reasonable adjustments in the workplace, such as those for nursing students on practice placement (Equality and Human Rights Commission, 2016e). Managing dyslexia is recognised as a life-long problem (NHS Choices, 2015f) with employers being required by law to make reasonable adjustments to the workplace to assist employees with dyslexia (Great Britain. Equality Act, 2010).

Opposing the NHS Choices (2015b) information is the NHS denial of dyslexia as a disability requiring reasonable adjustments (Great Britain. Equality Act, 2010) within the Accessible Information Standard (NHS England, 2015a) developed under section 250 of the Health and Social Care Act (Great Britain. Health and Social Care Act, 2012). The direct quotation makes it clear that NHS England (2015b, p. 20) excludes dyslexia as a disability requiring accessible information by framing it as a learning difficulty and partnering it with low literacy:

“For individuals who may have difficulty in reading or understanding information for reasons other than a disability, impairment or sensory loss, for example due to low literacy or a learning difficulty - such as dyslexia”

This “learning difficulty” (NHS England, 2015b, p. 20) frame of reference is comparable to Emerson and Heslop’s (2010) UK definitions of dyslexia as a learning difficulty and not a learning disability. As this was published in January 2010 it notably precedes the statute Equality Act (Great Britain. Equality Act, 2010) published in October 2010 where dyslexia was identified as a disability because the impairment has a substantial and long-term adverse effect on a person’s ability to carry out normal day-to-day activities (Great Britain. Equality Act, 2010).

The NHS is marginalising its own employees who are disabled people with dyslexia by viewing them as not having equal accessible information needs as patients and their carers’ who are disabled people who have difficulty in reading or understanding information (NHS England, 2015b). The Department for Work and Pensions states that employers must ensure that information is provided for employees in accessible formats (Great Britain. Department for Work and Pensions, 2016).

The suggestion that dyslexia is a difficulty and not a disability may confuse NHS health workers who are mentors (NHS, 2008). It is clear that within UK law they have responsibilities to ensure inclusive

pedagogies (OHCHR, 2016) for students with dyslexia, as a protected characteristic (Great Britain. Equality Act, 2010). They also must enable those who require reasonable adjustments (Equality and Human Rights Commission, 2016e) such as accessible information needs in their practice placements. I suggest that the NHS acts unlawfully as an employer (NHS England, 2015b) to deny the protected characteristic of dyslexia as a hidden disability (Great Britain. Equality Act, 2010).

Employees with dyslexia may have accessible information needs (NHS England, 2015a) that constitute a reasonable adjustment in the workplace (Great Britain. Equality Act, 2010). This exclusion is a form of indirect discrimination (Great Britain. Equality Act, 2010), furthermore, inaction on reasonable adjustments to NHS communications in the medium of literature and documentation for healthcare staff (NHS Choices, 2015f) is highlighted as failing NHS employed disabled people with dyslexia (Great Britain. Parliament. House of Lords Select Committee, 2016).

5.2.4 Being a student nurse with dyslexia on practice placements

In my study the student nurses with dyslexia described their experience of being with a frame of reference to being different from students

without dyslexia. Some students had a singular deficit [see 2.1] for example just with spelling and others had multiple deficits with multiple symptoms and multiple deficits in executive function (Pennington, *et al.*, 2012). There were three key nursing functions on practice placements that the students in my study all found some degree of difficulty with and these were handover of the shift, learning new clinical skills and documenting and reading about care.

5.2.4.1 Handover

The students in my study described their own difficulties with the handover of the shift. For most students their dyslexia deficits impacted on them giving the handover of the patients they had looked after to the incoming shift. Doris experienced difficulty pronouncing words and she had particular difficulty with the word ‘oesophagus:’

Doris: “Mine is in saying, I couldn’t say, ‘Oesophagus,’ and now I can. Literally in my head I would think oesophagus, but the speech is hard for me to get out. This is because sometimes when I look at a word, it’s how I’ll say it, letter by letter. That’s completely different from how it’s meant to be said, because the way it’s spelled isn’t how it sounds. It’s hard, I just have to keep saying it, but when I try and say it, it wouldn’t come out. I just couldn’t say it. I just could not say it. Then eventually, “I’ve got it! I’ve got it right!” Now, no problem”.

However pronouncing words for Doris will continue to be a challenge for Doris within her practice placements and she has a strategy to break these down into singular letter components using finger-tracking:

Doris: “The drug words are really hard for me to look at and say out loud. First I have to break the words down, I find that easier. I use my fingers to cover up

letters and say single letters, then double letters and then a few letters together, as you imagine, it's disjointed at first and bit-by-bit the spoken word comes together"

...and...

Doris: "I know what they're for but to say the word is very difficult for me"

Adam also experienced difficulty learning the correct pronunciation of words learning words and assigning them to his memory and he developed a strategy to use the audio of the word on his phone whilst tracking reading it:

Adam: "And I've got a dictionary in my phone, so I put it on the dictionary in my phone, it sounds it out. So, when I get the pronunciation viewed with the written word, and I use my finger to cover letters and break it down, then I'll be fine".

Using a similar strategy Cathy practices words using the audio function through an app on her phone until she has mastered the pronunciation:

Cathy: "My mentor told me off for texting and I showed her the word on my screen 'tracheostomy' and I said "takkyosteomaty" (chuckles) or something like it (chuckles) and we laughed and so I played the audio of "tracheostomy" "tracheostomy" and repeated it and saying it until I could say it. She was impressed with the app. I turned round being told off and opened her eyes to possibilities"

However the other mentor that she worked with was not as accommodating as Cathy recalls:

Cathy: "I'd go and hide with my phone and listen to the word with earphones through my tunic, like a drug name or something until I could say it"

Handover difficulties did not just come with verbalising the handover to the next shift. Students also describe difficulties receiving the verbal handover of patient care when they are on the incoming shift:

Freda: "In the handover I sit down and I slowly list things. Sometimes I just get lost. I might not be writing anything down. I leave space for all those words I

can't spell. They might just think that it's too fast and you can't keep up, so that why you left out the spaces...but its dyslexia"

Helen: "I have to be told like four times before it sinks in...everything goes quick, so to be able to absorb all of it in your brain and remembering what they're saying is a challenge... everyone always says how important communication is, but you can walk out of handover not knowing what's what...there could be a summary of a task list for what has to be done and what is outstanding for the incoming shift and the mentor could give this list to me, then I would clearly know what I have to work my way thorough during the shift"

On receiving the shift handover the auditory modality [see 2.1.5.1] impacts the executive function in terms of auditory sampling (Peterson and Pennington, 2012) in speech-to-sound cognitive phonological processing (Lehongre *et al.*, 2011) to decode and understand spoken words. There was a deficit in the temporary storage of verbal material (Menghini *et al.*, 2011) and accessing information from long-term memory was impaired (Anderson and Bower, 2014) [see 2.1.6]. This disadvantages the student's rapid access to diagnostic features of disease prototypes from the Wernicke area (Halpern and Goldfarb, 2013) [see 2.1.5.1 and 2.1.6.1] as the verbal components of working memory overworked and were inefficient and slow (Sira and Mateer, 2014). Disease prototype information was required rapidly during handover to document handover notes and make sense of patient's conditions [see 5.2.4.1] to proceed, just like non-dyslexic counterparts, in getting on with the work of looking after the allocated patients [see 5.2.2].

When giving the shift handover articulation of speech was affected [see 2.1.5.3] because of the deficits in verbal phonological processing fluency (Ramus *et al.*, 2013). Deficiency in the correct letter-to-speech sound integration (Blomert, 2011 and Zorzi *et al.*, 2012) and poor verbal categorical fluency (Varvara *et al.*, 2014) makes for particular difficulties when reading handover notes out loud [see 2.1.7.3]. Because of both phonological and orthographic confusability (Jones, Ashby and Branigan, 2013) speech was effortful and dysfluent with mispronunciations [see 5.2.4.1] and spoonerisms (Menghini *et al.*, 2011). These actions place the student at high risk of discrimination [see 5.2.2].

It was also difficult to deliberately stop a motor response, so there was a self-monitoring deficit in the ability to readily stop talking when someone else speaks up during handover because of an inability to inhibit inappropriate or irrelevant verbal and motor responses (Wang, Tasi and Yang, 2012). This means that the student frequently speaks over and interrupt others which was seen as rudeness [see 5.2.1.1]. Being rude activates social isolation [5.2.1] where either the student withdraws themselves as an active participant in the conversation or their non-dyslexic counterpart(s) wilfully exclude them from conversations for being ill-mannered.

Articulate pronunciation was important when giving handover to ensure that the audience of the incoming shift receive accurate information about the patients [see 2.1.5.3]. Examples of reasonable adjustments enabling nursing shift handover receipt [see 2.1.8.1] includes the freedom to use [see 5.2.1] auxiliary aids such as audio recording devices (Great Britain. Department for Work and Pensions, 2016; Great Britain. Equality Act, 2010, s.20(6)) [see 5.2.3]. This enables the detailed handover information to be heard repeatedly until it was decoded and understood so that a documented *aide memoire* was accurately constructed. For giving handover an enabling reasonable adjustment would be for the handover to be allowed to be [see 5.2.1] pre-recorded on an audio recording device (Great Britain. Department for Work and Pensions, 2016; Great Britain. Equality Act, 2010, s.20(6)) [see 5.2.3]. This auxiliary aid enables playback and correctional changes to be made by the student nurse (for fluent flow and correct pronunciation) before it was made available to the incoming shift.

One example of each of these three student nurse activities follows. Firstly during nursing shift handover [see 2.1.7.1] a student nurse who has memory problems affecting their understanding of handover had the freedom to use auxiliary aids such as audio recording devices (Great Britain. Department for Work and Pensions, 2016; Great Britain. Equality

Act, 2010, s.20(6)). It was the NHS employer's responsibility to have in place and regulate policy and guidelines on how this was executed which were compliant with the Data Protection Act (Great Britain. Data Protection Act, 1998) made publicly audible for the incoming shift audience.

5.2.4.2 New clinical skills acquisition

Beth described difficulties with learning in terms of attaining knowledge acquisition from textbooks:

Beth: "I read so many books, so many words, and I never ever can remember after a couple of days later on"

Cathy describes her memory as being so bad that it affects her learning on practice placements:

Cathy: "My memory is terrible, it's so, so bad. I struggle with some of the learning as well"

She goes on to describe her strategy for learning a new clinical skill such as aseptic technique:

Cathy: "I...studied the Marsden Manual and repeatedly watched the VLE VodCast of how to do it and assigned it to memory"

However, once assigned to memory Cathy then describes experiences of difficulty with memory recall:

Cathy: "Sometimes if I don't do something for a little while, I will really struggle with it. So I need sometimes a prompting and just keep doing so many times. I think it's just...its how I remembers more from my memory, rather than anything else. Otherwise, if I'm so out-of-sync with it, I don't always remember straight off-hand how to do it, unless I've done it for quite a while in the past. It's fine. I work it out in my head if I can step by step and do it slowly bit by bit to get it correct"

On receiving verbal instruction, during a clinical skill demonstrated by a mentor (NMC, 2008), the auditory modality impacts the executive function [see 2.1.5.1 and 2.1.7.1]. Dual-task management (Desmond and Marvel, 2009) and adapting responses to changes in task (Schmidt, De Houwer and Rothermund, 2016) were also challenging as there were problems with cross-modal attention and with difficulty switching between tasks (Kiesel *et al.*, 2010). The student struggles to shift between visual input to verbal encoding [see 2.1.5.1] whilst the mentor (NMC, 2008) was demonstrating with commentary because of the sluggish/slow shift from visual to auditory modality (Harrar *et al.*, 2014). This can be misinterpreted by the mentor (NMC, 2008) as the student ‘not listening’ and ‘not paying attention’ or ‘daydreaming’ and the mentor (NMC, 2008) may exclude the student perceiving them to be ‘uninterested in learning’ and ‘not applying themselves’. In circumstances where the student has made clear that they suffer from this deficit and the mentor (NMC, 2008) makes derogatory comments, e.g. see above, then this constitutes discrimination [see 5.2.2].

Failure to retain verbal and visual task-relevant information in short-term memory (McBride and Cutting, 2015) [see 2.1.6] disadvantages the student under solely verbal instruction (without *aide memoire*) and “poor short-term memory” was also an experience of students in the study of

my phenomenon by White (2007, p. 38). Examples of reasonable adjustments [see 2.1.8.1] for learning new clinical skills involve the student being allowed to document observational notes during the clinical skill and to have the freedom to use auxiliary aids such as a mobile video recording device within the clinical skills laboratories (Great Britain. Department for Work and Pensions, 2016; Great Britain. Equality Act, 2010, s.20(6)). This enables playback of the video until the procedural steps of the new clinical skill were learned (Knowles and Whittaker, 2013; Shaw and Knowles, 2014).

Likewise an example of reasonable adjustments for new clinical skills acquisition [see 2.1.7.2] for a student who had problems with sequencing and memory included the freedom to use auxiliary aids such as mobile technologies audio/video recording devices (without filming patients/service-users) to capture the procedural steps explained along with demonstration by the stage-two mentor (NMC, 2008; Great Britain. Equality Act, 2010, s.20(6) and Great Britain. Department for Work and Pensions, 2016).

5.2.4.3 Documentation

Adam invests some time at the start of each practice placement to record new words that he encounters into a pocket book for future reference:

Adam: "I got those words with me in a note book, and I'll be fine to write it out, to copy from my book. I collect particular words in the first few days of placement. When I come across new words, I just put it down, and I know I will have to write it down again for the patient notes".

When he is documenting care Adam makes this more straightforward for himself by using what he describes as writing down simpler words:

"I don't want to write something, rub it out, write again, they can look messy. So, when I come across those words, I write them out, look for other words similar to that that also work. I'll just break it down and put a simpler thing down because sometimes we have a really big word, and you've got other words that mean the same thing, and I can just write something easier, something simpler than that, it makes sense rather than making a mess."

He goes on to explain that the crux of documenting care is effective communication rather than the length of words that form it:

"Sometimes you want to just quickly write something, and I want to use the right word but I'll just have to use something another word but that might not be the right word. I would just use another word, something simpler, and as long as I can pass my message across."

Beth also uses an *aide memoire* self-developed pocket notebook strategy to enable her accurate spelling speed when documenting patient care:

"When I know I will use a word very often, I know myself and I would struggle after a couple of days for this word how to spell it. So I have made my own resources of words which feature as problematic. If I can just say, I have a tracking memory, so I remember to find where the things are in the book, even though it is strange that I don't remember what they are or the spellings!"

Beth uses this strategy as she describes herself as being unable to spell:

Beth: "I can't even...I can't spell even simple words"

Beth finds that she does not have visual stability when looking at the grids in the patients charts and she used her finger to track where she is on the cells:

Beth: "...completing my patient chart, I put my finger...well, actually I need to write in the particular column"

Beth also uses finger-tracking within the word when she is reading:

Beth: "I use my fingers to cover up words and letters and things when I'm reading"

Beth also finds that the text she is reading is stable if she uses a highlighter pen to remove the black ink on white page contrast and enable her reading and learning:

Beth: "for me it's much easier to remember if it's highlighted or something...I like papers, so I'm printing...a lot of information. Highlighting helps me"

Cathy also uses a colour filter to enable her reading:

Cathy: "I was stuck, I need to read a word, I couldn't get what the writing was. I'm to her "how do you this without colour glasses? Today I have forgotten my yellow glasses" And she said, "Oh my colour is yellow as well" and lent me her pocket size yellow colour magnifier"

Beth additionally has difficulty with her recall of spellings and describes the difficulties that she has trying to locate the correct spelling in the dictionary:

Beth: "because I can't remember how to spell words. Finding them in the dictionary book is very hard for me, I find, its hard because you have to spell it right a bit or spell it right a lot to even to find it! So sometimes a lot of trying again and again on what the word it might be"

Doris describes difficulties with spelling that she feels make her slow when documenting and sometimes she will ask a colleague to spell it out loud for her to write down:

Doris: "I said, "How do you spell this word?" It's one of the medical words...I'm bit a slower with things like this"

On other occasions Doris uses her phone to check her spellings:

Doris: "Things take me longer...when I'm doing the notes...because I'm constantly...either checking...looks like I'm on my phone but I'm checking words and spelling"

Gill: "Others seem to write things in a different order in a time chronological order. My order flows to me in the order of significance...it takes a while for me to see why it does not flow...I need more time with the documentation...I know it's wrong, but I can't see what it is that's wrong...I try to be slow to make sure, I'm doing the right things"

Written word recognition was an executive function of the 2-3-second window of working memory (Varvara *et al.*, 2014) [see 2.1.5.2] employing the magnocellular neural visual-spatial pathway for decoding [see 2.1.5.2.1]. These components were impaired in that they were inefficient and slow (Sira and Mateer, 2014). There was poor visual sequencing (Martinez Perez, Majerus and Poncelet, 2013) of letters and their order in words (Vidyasagar and Palmer, 2010).

Having poor procedural memory (Lum *et al.*, 2013) disadvantages the student in automatic cognitive skills [see 2.1.6]. This manifests as slow, un-fluent and degraded accuracy of printed word recognition (O'Brien, Orden and Pennington, 2013) e.g. within the patient history

documentation. A deficit in the temporary storage of visual-spatial material (Menghini *et al.*, 2011) ensures that reading patient documentation remains “effortful and slow” (Shaywitz, Morris and Shaywitz, 2008, p. 453).

When the student has made clear that they read slowly because of their dyslexia, and the mentor (NMC, 2008) hurries the student or makes derogatory comments about them for reading slowly, [see 5.2.4] they were discriminating against them. Students were less able to give attention to higher levels of executive function such as text comprehension (Hersch and Andrews, 2012) and repeatedly seek clarity from their mentor and a mentor (NMC, 2008) who refuses to help, when the student makes clear that they need this reasonable adjustment [see 2.1.8.1] was discriminating against them.

Examples of reasonable adjustments to enable the student reading policy/procedure/guideline documents [see 5.2.3] includes text with larger spacing and larger font size and extra time allowed for reading [see 2.1.5.2], auxiliary aids such as colour overlays [see 2.1.5.2.1] and text-to-speech software (Great Britain. Department for Work and Pensions, 2016; Great Britain. Equality Act, 2010, s.20(5)).

Oculomotor nerve control deficits also impact fluid automation of writing skills making it slow and laborious as the Mcells direct Pcells to guide hand movement [see 2.1.5.2.1]. Also the auditory processing/understanding disorders [see 2.1.5.1 mean that the grammatical structures of planning (Das and Georgiou, 2016) and organising (Wagemans *et al.*, 2012) the writing in patient notes were hindered. The student repeatedly feels the need to ask the mentor (NMC, 2008) to read through and check the order of what they have written (in rough notes) and ask for advice on corrections [see 5.2.4 and 5.2.2]. The mentor (NMC, 2008) who refuses to help or makes derogatory comments about them for poor grammatical structure (who knows that this was a particular problem for this student, because of their dyslexia), was discriminating against them. Reasonable adjustments for documenting patient care [see 5.2.2 and 5.2.3] includes the opportunity for typing writing instead of handwriting (Great Britain. Department for Work and Pensions, 2016; Great Britain. Equality Act, 2010, s.20(5)).

English spelling was highly nonphonemic (Westaway, 2014) and students have difficulty linking the correct phoneme to each letter (Dymock and Nicholson, 2013). The sub-lexical phonological processing of word parts was deficient (Beidas, Khateb, and Breznitz, 2013) and

this distorts sound-to-spelling learning (Peterson and Pennington, 2012) [see 2.1.5.1]. Students who use phonemes to spell result in the healthcare terms e.g. 'tracheostomy' being incorrectly spelt as 'treykeeostuhmee'. The mentor (NMC, 2008) who refuses to let this student use mobile technology e-spellchecker auxiliary aid as an enabling reasonable adjustment on practice placements [see 5.2.2] and/or refuses help with spelling or makes derogatory comments about them for poor spelling ability was discriminating against them.

The freedom to use auxiliary aids [see 5.2.1] such as e-dictionary via mobile technology (Great Britain. Department for Work and Pensions, 2016; Great Britain. Equality Act, 2010, s.20(5)) and provision of auxiliary service (Equality and Human Rights Commission, 2016d; (Great Britain. Equality Act, 2010, s.20(5)) where a colleague without dyslexia checks documentation and advises on spellings/punctuation for correction were enabling reasonable adjustments for students with dyslexia [see 5.2.1; 5.2.2 and 5.2.3].

An example of reasonable adjustments for student nurses with difficulty reading policy/procedure/guideline documents, [see 2.1.7.3] within practice placements, included access to text with larger spacing and larger font size and extra time allowed for reading [see 2.1.5.2]. Auxiliary

aids such as colour overlays [see 2.1.5.2.1] and text-to-speech software (Great Britain. Department for Work and Pensions, 2016; Great Britain. Equality Act, 2010, s.20(5)) were readily used. Finally, reasonable adjustments for spelling difficulties whilst documenting patient care [see 2.1.7.3] included the freedom to use auxiliary aids such as an e-dictionary via mobile technology (Great Britain. Department for Work and Pensions, 2016; Great Britain. Equality Act, 2010, s.20(5)).

Reasonable adjustments for student nurses with dyslexia may involve the provision of auxiliary service (Equality and Human Rights Commission, 2016d; (Great Britain. Equality Act, 2010, s.20(5)) where a practice placement colleague without dyslexia checks documentation and advises on spellings/punctuation for correction. The auxiliary aids were provided for student nurses by Student Finance England via disabled students' allowances (DSA-QAG, 2016) and the auxiliary service was provided by the student's mentor (NMC, 2008). The function of these reasonable adjustments requires co-operation of mentors (NMC, 2008) and their colleagues as well as nursing managers and policy makers to ensure that they were carried out in practice (Great Britain. Department for Work and Pensions, 2016).

6.0 Study limitations:

A limitation of my literature review was that I did not source all of the scientific-based research on what dyslexia is [see 2.0]. This was because of the volumes of research publications attributed to this field. I therefore apologise to my fellow scientists, that prolific research results are absent from my review. This was due to the limitations of time constraint which did not allow for the capacity to systematically review (Higgins and Green, 2011) or meta-analyse (Deeks, Higgins and Altman, 2011) or meta-summary (Sandelowski *et al.*, 2007) the scientific brain-based research on what dyslexia is [see 2.1]. This limitation impacts upon my capacity to synthesise my research findings and I acknowledge that there is researchers work missing from my discussions [see 5.2].

I want my research design and processes to not only be replicable, but to be improved upon so that the knowledge base on my phenomenon is developed by my fellow researchers (Knowles, 2010e). This involves transgression beyond the scope of my own study.

As the postmodern perspective is to deconstruct taken for granted assumptions, strategies and habits (Reason and Bradbury, 2009) I reflected on my methodological strategies and I particularly sought out researcher bias in an attempt to identify the limitations of my study

(Cohen, Manion and Morrison, 2017). However, this is a self-limiting activity and the critique of my research (Knowles and McGloin, 2007; Knowles and Gray, 2011) by the wider education, nursing practice and research communities using tools such as CASP (2014) is essential as a measure of the usefulness of my results and findings.

Willig (2012) advised that it was not enough to know why I chose and used one particular methodology within my research design, I also needed to know why I did not select other methods. I used reflection to consider this along with other issues concerning the limited resources for my own research study (Schön, 1987).

6.1 Generalisability of my results

I recruited student nurse participants [see 3.4] for my e-survey (Knowles, 2010a) data collection [see 3.5.1] and I did not include other professionals who function in the health service within the multi-disciplinary healthcare teams. This means that the perspective of those with dyslexia in the clinical learning environment was limited to only student nurses [see 1.1]. As a nurse educationalist I chose to do this as my professional doctoral degree is a qualification for the job I am already doing [see 1.4]. I understand that nursing education is my contracted

priority and my employer was the stakeholder supporting the development of my research skills (Jackson *et al.*, 2011).

Another perspective would come from my study also recruiting the stage-two mentors of my participants (NMC, 2008) from the NHS, private, voluntary and independent sector employers (Jinks, 2007). I chose to set boundaries or limits to the geography of my studies ethical application procedures (Knowles, 2010c). I did this because I needed my ethical approvals (Knowles, 2012) to be achievable within the timeframe of my doctoral degree studies and NHS ethical approval is a lengthy process (Knowles, 2007). A strength of my study was that my student nurse participants were allocated to multiple practice placements pan-London rather than one particular hospital. However my study is limited to perspectives from one UK city without other inner-city or rural representation.

Due to resource constraints my sample was limited to recruitment of students from a single UK capital university. To assist in ensuring that these primary results are representative and generalisable to more populations of student nurses with dyslexia (Harvey and Land, 2016) it would be worthwhile undertaking larger-scale research with participants from other NMC approved universities (NMC, 2016a) in the UK. The

inclusion of fellow stage-four lecturer/practice educators (NMC, 2008) also recruited from UK universities would provide a broader perspective toward completing the clinical learning environment landscape of understanding my phenomenon.

It will be useful for researchers to work together on building the knowledge base on the perspective of all healthcare students with dyslexia and also on all healthcare professionals with dyslexia. The full range of clinical learning environments within the NHS, private, voluntary and independent sectors are to advisably be included. Healthcare educators within universities in the UK and internationally would also contribute to this comprehensive knowledge base. In reality, rather than one extremely large study, the knowledge base will likely be developed from collections of smaller studies. Just like me each researcher will set their own limits or boundaries within studying the phenomena of health carers with dyslexia in the clinical practice environment. Collectively a sound knowledge base will be built that will be accessible through systematic literature reviews that will be undertaken and published as secondary research.

I consider that my quantitative research may be prone to volunteer bias (Trochim, Donnelly and Arora, 2016). This is because volunteers are

likely more motivated and concerned about perceptions of my phenomenon than non-volunteers (Shye, 2010). I base this assumption on a volunteer making a conscious decision to put themselves forward as a participant and share information on my phenomenon [see 3.3.1], and perhaps they acted purposefully within a 'Hawthorne Effect' something in mind to contribute clearly into my data (Mayo, 1945) [see 4.2].

This may be the case as my participants were made fully aware about my study purpose within my 'participant information sheet' (Knowles, 2010d) and this awareness could have a tendency to influence their responses to my e-survey (Knowles, 2010a) in a way that they would not have answered them if they were not aware of my study intent (Mayo, 1945). If instead Chans questions (2001) within Salamonson *et al.*'s (2011) instrument were to be used with my e-survey (Knowles, 2010a) by a university routinely after every student nurses practice placement has finished then risk of researcher influence would be reduced and perhaps almost eliminated (Sekaran and Bougie, 2016). To maintain participant confidentiality the researcher would need the non-dyslexic students data sets filtered out of the data by DDS administrators [see 3.3.2]. This approach would also have the advantage of larger and comparable data sets and the option to randomly sample participants

from these sub-divided data sets. This research design brings advantages within confidence intervals and tests of significance for statistical inferences (Kass, 2011).

As my quantitative data was collected by way of a self-reporting retrospective e-survey (Knowles, 2010a) my participants rely on their memory and recall and another bias I considered was memory bias (Mitchell and Greening, 2012). People have a tendency to recall fond or positive memories more than negative ones (Anderson and Bower, 2014). This can favour the results of the practice placement environment as a better place than it was for learning and mentor support (NMC, 2008) appear better than it actually was. However this psychological behavioural theory (Langdridge and Hagger-Johnson, 2013) has not been tested on groups of people with dyslexia to see if the same assumption applies to this community of people.

Representativeness of participants [see 3.4.2] is relevant when considering generalisability of research findings to other's contexts for evidence-based practice (Grove, Gray and Burns, 2015). The common characteristic nominal variable classifications I selected came from the NMC (2009). The council use these to collect metrics on the UK demographics of registered nurses. I chose to use the same

classifications so that NHS nursing managers can readily compare the demographics from my research sample into their own populations.

Nurse educationalists in other UK universities can readily compare the generalisability of my study [see 4.1] into their current demographics using the HESA (2017) database. The following five examples illustrate that I ensured that my study was not limited by recruitment discrimination.

Firstly, suppose that I did not offer equal opportunity for females to participate (Great Britain. Equality Act, 2010). Imagine that I held a gender bias toward wanting mostly/all of the $N=21$ male student nurses with dyslexia in my research study and targeted males to take part. This samples perspectives would not represent the counterpart $N=105$ females. This renders my research results as non-representative to the entire $N=126$ local population of nursing students with dyslexia. Also, as males were underrepresented in the 36,875 UK BSc. (Hons.) nursing student population at around just 2,980 or 8% (NMC, 2009; and HESA, 2010) my gender discriminative results (Great Britain. Equality Act, 2010) would also not be representative as an evidence-base for nurse educationalists professional pedagogy in the other 76 UK NMC approved universities (NMC, 2016a) [see 3.4.2; Table 17 (LSBU, 2007/8)].

In my study the $n=7$ male participants or 11% (Knowles, 2016) fully represented the 115 or 11.8% local proportion of male nursing students (HESA, 2010). These levels were higher than the national 8% male student nurse body (HESA, 2010) and is comparable to the average 10% of males on the NMC register (NMC, 2008 *cited in* Knowles, 2010c). The $n=57$ or 89% of female participants in my study (Knowles, 2016) were also representative of the local proportion of 859 or 88% of female nursing students (HESA, 2010). It was also representative of the females on the NMC register (NMC, 2008).

In my recruitment area there was a reducing population shown in the demographic data of students on the BSc (Hons.) nursing course from 336 first years through to 328 second years and 310 third years. This was possibly accounted for in three ways. Firstly there are increasing commissions by health education pan-London year-on-year (NHS-HEE, 2016). Secondly there is well-documented UK nursing course attrition of up to 25% and this is highest within the first year of studies (Willis, 2015). Third and finally enforced and voluntary interruptions to studies taken by students during the second and third years of the course naturally shows higher reinstated student numbers in the first and second years.

Consider my second example of sampling my quantitative research participants, what if I particularly liked teaching first year students and was biased toward involving these groups of students? What if I actively sought participants from the $N=34$ first year nursing students with dyslexia? Data collection from the combined majority of $N=92$ second and third year nursing students with dyslexia would be compromised [see 3.4.2; Table 17 (LSBU, 2007/8)].

Mental health field of study includes $N=18$ students with dyslexia, representing just 14.3% of the $N=126$ total three fields of study. Imagine for my third example that I particularly like teaching mental health field nursing students and favourably approached them for my study. If this were the case then these $n=18$ would proportionally underrepresent the other two fields of study in the entire $N=126$ local student population with dyslexia [see 3.4.2; Table 17 (LSBU, 2007/8)]. The results from mostly/all mental health field of study or mostly/all first year nursing student participants would neither be representative as an evidence-base for nurse educationalists professional usage in the pedagogy of nursing students with dyslexia for all three fields or for the three-year long nursing courses in the other 76 UK NMC approved universities (NMC, 2016a).

For my fourth example, suppose that my invitation to prospective research participants from the $N=126$ total target population illegally held racial discrimination within its process (Great Britain. Equality Act, 2010). What if I only invited the $N=72$ student nurses from 'any white background including white British and white Irish' ethnic heritage to participate [see 3.4.2; Table 17 (LSBU, 2007/8)]. This discriminative sample excludes the local population of $N=54$ nursing students with dyslexia who were from diverse backgrounds.

The two nursing students with dyslexia from 'any Asian background incorporating Asian' or 'Asian British Indian/Pakistani/Bangladeshi and mixed Asian ethnic heritage' would be completely excluded as a minority group. Likewise, the $N=46$ nursing students with dyslexia from 'any black background' incorporating 'black British and black British African' and 'mixed black ethnic heritage' at my local university would also be marginalised and my research would not be representative of the cosmopolitan LSBU nursing student body [see 3.4.2; Table 17 (LSBU, 2007/8)].

In the UK 36,875 BSc. (Hons.) nursing student population there were only 6,670 nursing students who were not from 'any white background'

ethnic heritage (HESA, 2010). There would be some non-city and rural establishments where the student population was mostly/all comprising of those who were from 'any white background' ethnic heritage. It will be a challenge for these nurse educationalists to consider the relevance of my UK capital multi-ethnic heritage participant research results as representative of their own student nurse body.

The fifth and final point I illustrate on diversity within my study recruitment involved age discrimination avoidance (Great Britain. Equality Act, 2010). Imagine that I was biased toward including the youngest student nurses with dyslexia. Suppose that my research sample resultantly comprised of mostly or all $N=35$ participants drawn just from the '18-21 years old' age grouping. If this were the case, then my research sample of participants would not be representative of the diverse age range of the $N=126$ nursing student population with dyslexia. Such age discrimination (Great Britain. Equality Act, 2010) when inviting my participants to take part would also render my results as non-representative of the nursing student population with dyslexia at large in the UK (HESA, 2008b *cited in* King's College London, 2009).

6.2 Transferability of my findings

As warned by Dahlberg and Dahlberg (2004 p. 273) it is important for me to be “careful not to make definite that which is indefinite” in that there can be no certain generalisability of my qualitative findings because of the human-ness of each of my individual participant’s lived-experience (Willig, 2012) [see 4.3]. A phenomenological description was always limited to one of my $n=8$ participant’s first-person unique description of their experience and my phenomenological interpretation was always limited to my own one-person researcher expression (van Manen, 2016).

As a researcher with dyslexia a resource limitation throughout the analysis of my findings [see 4.4] was the limited capacity of my own short-term working memory (Martinez Perez, Majerus and Poncelet, 2013) [see 2.1.7]. Although I have this condition, I also have a broad general knowledge and understanding of dyslexia (Killam, 2013) [see 2.1]. Conversely for phenomenological research on my phenomenon it would be a weakness for me to have the reverse combination of unlimited working memory capacity with a lack of accurate knowledge and experience on the condition that is dyslexia (Jootun, McGhee and Marland, 2009). The reflexivity I had as a researcher with dyslexia using

hermeneutic enquiry on my phenomenon of interest was a strength of my study (Agrey, 2014).

In combination with participant data made available to me for my analysis being unique [see 4.3 and 4.4], my own interpretation and synthesis of my participant-group findings is unique [see 5.2]. Because of this there can be no exact study replication (Matua and Van Der Wal, 2015). However it was my intention to present my research design and process [see 3.0] in such a manner to represent some configuration of repeatable methodological structures in a way that conforms to acceptable practices from the wider research community (Smith and Ceusters, 2010). The field of my research phenomenon is open to possibilities for other complementary or contrasting, deeper and richer descriptions of findings and theory generation to support or refute my limited study (Burnard, Morrison and Gluyas, 2011; van Manen, 2016) [see 8.2].

The ontology-based analysis of my data (Killam, 2013) [see 4.4] in a complex and heterogeneous domain of the signs and symptoms manifesting from dyslexia was limited [see 2.1]. I applied reflexive constraints on what could be said (Johnson and Christensen, 2014) and

I did this within the framework I created within my concept-book (Brenner, Brown and Canter, 1985) [see 3.2.2]. However, the ontology from my interpretations and synthesis of my own research findings was analogous to the theory developed by my fellow researchers on my phenomenon of interest, along with some addition to this structure of micro-theories as my new research findings (FHEQ, 2008) [see 5.2.1-5.2.4].

My qualitative enquiry was resource bound and limited to just $n=8$ participants and whilst this was appropriate for the qualitative methodology I chose (Fletcher, 2017), a larger sample would ensure that themes would have been expressed more often in my data (Fugard and Potts, 2015) [see 3.5.2]. However as the sole researcher a large sample size for me to interpretatively analyse [see 4.4] might actually be detrimental. This is because it may have led to me valuing breadth and quantity of my findings over their depth and quality (Rao and Donaldson, 2015) [see 5.2].

My interview study participants were sourced from my $n=64$ population of student nurses with dyslexia who had completed my e-survey (Knowles, 2010a) [see 3.4.4]. Nursing students with dyslexia may

experience memory deficit as a challenging executive function (Crouch, 2008; Child and Langford, 2011 and Anderson and Bower, 2014) [see 2.1.7 and 2.3.4], and my interview data collection was reliant upon my participants' memory of their lived-experience [see 3.5.2]. As I did not select and differentiate my participants subtype groups of dyslexia [see 2.1.3] my collective findings might mask the severity of how dyslexia affects the 'dystriplicity dyslexia' sub-groups executive function in practice placements (Hartas, 2015) [see 2.1.8]. This is because this subtype comprises the phonological [see 2.1.6.1.1], visual [see 2.1.5.2] and verbal [see 2.1.5.3] networks.

Equally it is unknown whether the participant phenotype with 'dystriplicity dyslexia' dominated my sample and might collectively portray the deficit of executive function in practice placements as more challenging (Varvara *et al.*, 2014) than that experienced by a majority of participants with the subtype 'auditory dyslexia' (Myklebust, 1965) or 'dysphonetic dyslexia' (Boder, 1970) [see 2.1.3]. This also applies to those who are sub-grouped with visual-attention span dyslexia (Vidyasagar and Palmer, 2010) termed by Johnson and Myklebust (1967) as 'visual dyslexia' or 'dyseidetic dyslexia' (Boder, 1970) or 'attentional dyslexia' (Shallice and Warrington, 1980). This research outcome would also be

applicable to those who have combined ‘dysphonetic dyslexia’ and ‘dyseidetic dyslexia’ (Boder, 1970 and Lobier, Zoubrinetzky and Valdois, 2012) without a verbal articulation disorder (Ramus *et al.*, 2013) [see 2.1.3]. In other words problems with executive function deficit would appear heightened more to my interpretations than they were in reality for these individuals in practice placements (Thorne, 2016) [see 2.1.8].

Viewed through a statistical probability lens (Kass, 2011) my research study findings are likely skewed towards the cognitive profiles typical of the two main subtypes of ‘dysphonetic dyslexia’ (Boder, 1970) and/or ‘dyseidetic dyslexia’ rather than revealing the ‘substantial disadvantage’ (Great Britain. Equality Act, 2010, s.212(1)) and disability experienced by the minority subtype with ‘dystriplicity dyslexia’ [see 5.2].

The subtype groups of IQ were also unselected for differentiation in my participant findings. Poor performance or difficulties with executive functioning in practice placements (Pennington *et al.*, 2012) [see 2.1.8] may be due to the average intellectual abilities of participants rather than being due to the dyslexia deficit itself, and my study is therefore limited in this respect (Gresham and Vellutino, 2010).

7.0 Reflections on learning about myself:

The nature of understanding my participants was a vehicle to finding out about myself (Rogers, 1969) and this reality was complex and multi-layered and involved all stages of my research process (Cohen, Manion and Morrison, 2017). My literature review [see 2.1] provided rich information for me to understand my own behaviour and identity (Holland and Lachicotte, *in* Daniels, Cole and Wertsch, 2007). It enabled an enhanced metacognition and by this I mean a broader and deeper understanding of my own thinking and learning processes.

As mentioned earlier, I was diagnosed with my dyslexia in mature adulthood (age 43), so I had lived a long life before I got my SpLDs diagnosed. This was because I concealed my difficulties, especially in childhood and throughout my employment for fear of how my behaviour would be viewed by others. I was frustrated about how hard I found everything in life. I was full of self-doubt about my own capabilities. I struggled throughout childhood to find anything that I believed that I was actually good at and I found it difficult to develop any positive self-image and confidence. I was regularly told I was stupid and that happened a lot while growing up.

When diagnosed I was already master's degree educated, but this was not seen by me as enough to herald myself as successful. I also dismissed being seen by others as successful and denied myself such attributes. Post-diagnosis I set about bringing greater visibility to higher education institution nursing students and others with SpLDs. I spoke openly about my dyslexia with colleagues and students, even though I found it an extremely challenging disorder to begin to explain.

During my doctoral degree studies, as an unforeseen problem, I became increasingly psychologically compromised by the emotional labour of studying and learning about the multiple deficits of my dyslexia and the negative reflections on my past experience (Levering, 2006). A particularly difficult period was, during the piloting of interviews, when I was listening to the student's experiences of social isolation, inequality and discrimination including exclusion that were entirely familiar to me. I was diagnosed with severe clinical depression and, as I was critically ill, I ceased employment and doctoral studies during a very long treatment and recuperation period. I eventually recovered my health and now feel more able to highlight to others the areas I find difficult because of my dyslexia. I would like to make my dyslexia 'normal'. But I had a tendency to tell people the reason why I was debilitated and struggling to execute an everyday day-to-day activity.

On completion of this doctoral degree thesis report I allowed myself the gift of reframing my self-image as a high-functioning person with dyslexia. Although to date they were limited, I made a promise to myself to focus on my own empirical attributes of dyslexia and I pursued evidence-based knowledge on this phenomenon.

7.1 Evidence-based attributes of dyslexia

Through my extensive searching and reading on dyslexia I noticed that researchers frame it as a medical disability [see 2.1] or as a characteristic of difficulty reading [2.1.6.1.1]. The vast majority of the literature about dyslexia as a positive attribute is both anecdotal and opinionated. It is also mostly attributed to individuals who were well-known in society as high-achievers and were a famous personality through the world of business, history and popular culture. Here follows the sum total of all five research results/findings on the positive attributes of dyslexia which sorrowfully equate to just three paragraphs of my thesis discourse.

Reported attributes in neurological studies of reading show that those with dyslexia process written information in an atypical way. They frequently show spontaneous activation in encephalon areas of visuospatial processing to construct rich and explicit visuospatial

representations during reasoning (Bacon and Handley, 2010). Therefore those with dyslexia hold a spontaneous reasoning strategy based on explicit visual representations (Bacon and Handley, 2014). This was achieved by spontaneously composing a mental picture of narrative, using the semantics (or image of meaning) of words (Bacon and Handley, 2010). The inherent temporal pause (being slower) was advantageous as it allows for development or implementation of self-directed or self-regulatory actions (Wang, Tasi and Yang, 2012). Through reading focus the vocabulary breadth (number of known words) and vocabulary depth (precision) were more developed in those with dyslexia (Cavalli *et al.*, 2016).

Psychologist's research into the Big 5 personality traits by Tops *et al.* (2013b) examined hypothetical attributes (five traits) that influence behavior, feelings and thoughts across situations. Their study reveals that university students with dyslexia attain better scores than students without dyslexia on the agreeableness and conscientiousness categories and seem to have more resilience to confront and deal with their dyslexia deficit challenges.

Agreeableness is an interpersonal behavior with orientation to the experiences, goals and interests of others. Therefore student nurses

with dyslexia generally have an optimistic view of human nature and get along well with others. Agreeable people are friendly, tactful and warm. Traits to be expected in a student nurse with dyslexia are therefore cooperativeness friendliness and helpfulness. There is also a tendency for student nurses with dyslexia to be less antagonistic and less egocentric. Conscientiousness as conscience is a control mechanism and directive for behavior. Traits to be expected from a student nurse with dyslexia are expediency, thoughtfulness and self-discipline. They are generally efficient and organized as opposed to easy-going and disorderly [see Table 45].

Big 5 Personality Traits:	Categories students with dyslexia scored better in than students without dyslexia:
Agreeableness	Trust Compliance Modesty
Conscientiousness	Competence Order Achievement Striving Self-Discipline Deliberation
Extraversion	Assertiveness Activity
Neuroticism	None
Openness	None

Table 45 - Big 5 personality traits of students with dyslexia

Toward the end of my studies whilst writing up my thesis report I recognised a profound change in my lens on dyslexia and I decided that in all future works I should like to examine the qualities of being a person with dyslexia through an ableism lens. This will start to generate a new body of knowledge that is important for my future as well as for those who share this condition.

8.0 My research-practice continuum:

Theory enlightens my life and my educational practices and by reflecting on my practice I develop and enlighten my theory (van Manen, 2016), this means that I purposefully bring the meanings of my phenomenon to my reflective awareness (Schön, 1987). I believe that this has grown with my *a posteriori* experience and is developing with a wisdom for my educational practices of living (van Manen, 2016).

I have the self-identity of a person with dyslexia and hold a role as a nurse educationalist (Holland and Lachicotte, *in* Daniels, Cole and Wertsch, 2007). This influences my position on the perceptions and experiences of student nurses on practice placements as a phenomenon that I care to understand about (van Manen, 2016). I value diverse, inclusive and equitable pedagogy of student nurses (Merleau-Ponty, *in* Cobb *translation by* Edie 1964) and as my beliefs guide my actions and judgements (Geach and Holówka, 2012) I believe in students with dyslexia being fairly treated by me.

A desirable goal is to fully mainstream my values and beliefs on equality, diversity and human rights into the UK-wide pedagogy of mentorship (NMC, 2008). As a UK citizen I am constitutionally entitled to equal rights to participate in and influence my government (Great Britain. Department

of Health, 2015). I plan to be influential within healthcare and nurse educational policy by continuing my development as a researcher. I should like to contribute substantially to the development of new ideas and approaches within the field of my phenomenon (FHEQ, 2008).

8.1 My recommendations for practice

In this section I discuss the relevance of my study results and findings for nursing education. My study shows that there must be all too many impoverished learning environments where stage-two mentors' (NMC, 2008) negative attitudes towards students with dyslexia pervade practice placements.

It is recommended that no harm or non-maleficence [see 3.3.3] must be governed in research studies with vulnerable groups of people participating (BERA, 2011) e.g. student nurses with dyslexia. To safeguard the human subjects (ESRC, 2017) it is recommended that a post-participation debriefing must be offered. This is because ontological interviews serve as an intrusion into private feelings such as lived-experiences of social injustice and hold a high risk of evoking feelings of distress (Kinley, Sadurski and Walton, 2013). It is recommended that researchers in the field of university education make post-interview debriefing arrangements for each student participant with the existing

counselling and welfare personnel within the campus through their local student services departments (ESRC, 2017). It is therefore also recommended that university ethics committees review their policy on research governance on the foreseeable risk management of safeguarding vulnerable groups (LSBU, 2006).

I consider how my thesis can be used to influence the clinical learning environment climate in a positive way. To this end I am offering up useful information to nursing education; NHS healthcare employers, nurse registrants who are stage-two mentors or stage-four lecturer/practice educators (NMC, 2008) and pre-registration nursing students with dyslexia.

8.1.1 Nursing education and NHS policy

One research study rarely provides sufficiently robust evidence to recommend changes to clinical practice or healthcare policy decision making. My study therefore sits as just a step in the right direction in providing informatics on my phenomenon. My study provides the only evidence and recommendations for policy change and this will be stronger when supported by future research evidence [see 8.2].

I recommend that the mentorship standards (NMC, 2008) and the regulation of these be reviewed to include education for new and existing stage-two mentors (NMC, 2008). Education on UK disability law and specific learning difficulties including the protected characteristic of dyslexia (Great Britain. Equality Act, 2010) should be transparent in all of these courses at approved universities (NMC, 2016a). This is to advisably include education on specific individual reasonable adjustments that enable student learning within the practice placement environment (Equality and Human Rights Commission, 2016e).

As a major UK employer, I recommend that the nature of dyslexia be given a heightened profile by the NHS. This could begin by revising the ‘accessible information standard’ (NHS England, 2015a, under section 250 of the Great Britain. Health and Social Care Act, 2012) to include accessible information for NHS employees with SpLD’s including dyslexia. This would mean that all NHS communications in the medium of literature and documentation utilised by healthcare staffs is available in enabling formats.

8.1.2 Pedagogy in healthcare settings

As a nurse registrant I work with my inter-professional nursing colleagues as part of the wider healthcare team (NMC, 2015a). I believe

that we are good team workers when we share and show caring and compassionate understanding to one another (Cummings and Bennett, 2012). I recommend that a stage-two mentor-student relation based on this belief is a good predictor of effective mentoring for student success (NMC, 2008).

There is a perception that student nurses with dyslexia pose a physical risk to others, including patients. This conception applies a medical model of risk, with dyslexia portrayed as a physical potential problem to patients in the students care. This is frequently raised as an unfounded warnings of potential danger in publications directed toward nurse educationalists (Morris and Turnbull, 2006) [see 2.3.2.1]. The medical model is the foundation to healthcare employers and employees taking measures to prevent risk to patients (Walker *et al.*, 2013). Resultant values and beliefs of disablement and inability for students with dyslexia becomes a barrier to student progression and success. The real risk is that instead of inclusion (Great Britain. Equality Act, 2010) the student nurse with dyslexia experiences exclusion on the grounds of their perceived risk to patients.

The educational model of risk perceives the student circumstance of risk to others, including patients through a different lens. Here dyslexia is

portrayed as an actual psychological problem. Researchers focus on the behavioural traits of student nurses with the condition (Ikematsu *et al.*, 2016). Stage-two mentors (NMC, 2008) who do not have an understanding of dyslexia as neurodiversity will be fearful of the unknown differences of it. They may imagine perceived risk to the patients delegated under the student nurses care (Dearnley *et al.*, 2010). The student's difference in executive function caused by their disability [see 2.1.8] is at high risk of not being met with diversity of mentoring pedagogy (Great Britain. Equality Act, 2010) and dyslexia itself is the barrier to support for learning (Walker *et al.*, 2013). The real risk is that instead of diverse stage-two mentoring support (NMC, 2008) the student experiences a localised practice placement culture that demands homogeneity and the requirement to 'fit in.' A fear fuelled response of a student in this circumstance may be to adopt behaviour to disguise and mask their difference and not disclose their dyslexia (Ridley, 2011; Stanley *et al.*, 2011; Sanderson-Mann, Wharrad and McCandless, 2012). In these circumstances students are at actual risk of being failed on practice placement followed with a BSc. (Hons.) discontinuation. Before this point is reached, the university and healthcare education commissioners (NHS-HEE, 2016) are at actual risk of this student's attrition (Willis, 2015).

I propose that my research is utilised to bring beneficence to student nurses with dyslexia in terms of optimal human functioning, flourishing and well-being (Hefferon *et al.*, 2017). I recommend that a social model of risk be championed. This perceives student risk to others, including patients as equal and exactly the same whether or not the student has dyslexia. Here dyslexia is viewed as neurodiversity and disablement barriers are an organisational-culture or environmental problem.

Researchers focus on enablement (Storr, Wray and Draper, 2011). With a solution focused approach with enabling reasonable adjustments to practice placement pedagogy and stage-two mentor support (NMC, 2008) risks are managed. The risk of there being no reasonable adjustments in practice placements for student nurses with dyslexia are that they experience inequality (Great Britain. Equality Act, 2010). The actual risk of inequality is that they will experience work-based stress/depression and accrue absences progressing toward attrition (Willis, 2015).

As there is an apparent need for an evidence-based text book for mentors [see 5.2.1] it is my recommendation that this be developed. This is a project that I could co-author with other my fellow researchers within the field of the condition of dyslexia. Content should include the range and severity of dyslexia deficits along with practical examples of diverse

pedagogy for student nurses with dyslexia on practice placements.

Developing such a book is ambitious and I will seek advice on this project work from my supervisory team and their department manager.

A second textbook could be developed for stage-two mentors and stage-four lecturer/practice educators (NMC, 2008) with further information that includes an evidence-base of dyslexia deficits [see 2.1] and the signs and symptoms on this that are likely to be manifested in student behaviour within the university and practice placement contexts. This should include guidance on how to encourage student nurses who demonstrate these behaviors to seek a specialist diagnostic assessment [see 2.1.7].

8.1.3 Pre-registration nursing students with dyslexia

A goal for my research was to improve the lives of student nurses with the protected characteristic of dyslexia (Great Britain. Equality Act, 2010) for whom I care about.

I recommend a two-pronged approach, firstly that student nurses disclose their dyslexia to their mentors so the need for help is identified. Secondly that all the tools are put in place from the assessment of their learning needs with all of the reasonable adjustments in practice placements that they are entitled to. I recommend that students find out

about their own dyslexia and hone in on their deficit and the problems that it causes for them on placement. When the deficit is well-known to the student then a solutions focused approach can be undertaken.

It would be useful for students to have access to an evidence-based text book on dyslexia. This is a project that I could co-author with other my fellow researchers within the field of my phenomenon. Content should include the what dyslexia is and what the dyslexia deficits are along with practical examples of coping strategies for coursework in the university and practice placement settings.

At interview Eva suggested that students with dyslexia to be matched with a mentor (NMC, 2008) with the protected characteristic of dyslexia (Great Britain. Equality Act, 2010) whilst in practice placements.

Eva: "I think it helps if someone on your placement is dyslexic as well because you got someone to talk to, if they could pair up a student with dyslexia with a mentor with dyslexia, I think that would help my confidence a lot. I have not heard of this sort of idea being tried out to see if it helps me, but I'd like to try it"

Within this mentor-student relationship they can share ideas on coping strategies and reasonable adjustments. I recommend that her idea be piloted alongside a pre and post change quantitative comparative study that examines the perceptions of the mentors as well as the perceptions of the students.

8.2 My recommendations for further research

I reiterate that the scientific knowledge on the brain basis of dyslexia itself is limited in that it holds gender bias through the multi-disciplinary scientific study of mostly male subjects (Beerya and Zucker, 2011) [see 2.1.2.1]. My own research was predominantly with female participants [see 4.1] and there is a need for more sex-specific investigations into the scientific brain basis of dyslexia (Evans *et al.*, 2014).

Further research evidence on the experiences of students with dyslexia and NHS workers with dyslexia, in health and social care environments, is required to bring about the change of inclusive treatment of the disabled (Great Britain. Equality Act, 2010) by their counterparts in the NHS and social care. A future area of research would be on the perceptions and lived-experience of other health and social care students with dyslexia and I recommend that this research process, as developed for my own EdD study could be deployed (Knowles, 2017).

For the NHS Review of Equality and Inclusion Strategy (2016) to recognise different groups of disability within the mandatory NHS Trust data collection from 2018.

Khachouf, Poletti, and Pagnoni (2013) espouse research in neurophenomenology on people's subjective experience by cognitive scientists and psychologists. Recognition that this could be undertaken on a community of people with developmental dyslexia was wanton and I profess that this could be pivotal to yielding new insights into the modalities of subjective experience of psychosocial constructs and their neural underpinnings.

9.0 Conclusions:

As a nurse educationalist working in a UK university I led my professional doctoral degree research enquiry independently to attain a qualification in relation to my existing employment (Jackson *et al.*, 2011). I had formed my aims around the special focuses of my coursework on; ‘sustainability, equality and diversity’ (LSBU, 2017) to research the practice placement perceptions and lived-experiences of a community of pre-registration student nurses with dyslexia. Approximately between 3,687 - 7,375 student nurses with dyslexia (HESA 2010) spend 50% of their university coursework on practice placements (NMC, 2010).

Dyslexia is heritable (Scerri and Schulte-Körne, 2010) and a chronic condition of hidden disability (Great Britain. Equality Act, 2010). It has a genetic aetiology (Scerri *et al.*, 2010; Kere, 2014) and is caused by cerebral mal-neurodevelopment (Whitaker, 2010) occurring during the gestational formation of the central nervous systems *in utero* (Platt *et al.*, 2013). Dyslexia is an incurable, persistent lifelong condition (NHS Choices, 2015a).

Dyslexia has a specific group cognitive characteristic profile (Ramus and Ahissar, 2012) of neurological and psychological ‘specific developmental disorders of scholastic skills’ (WHO, 2016) or ‘specific learning

disabilities-SpLD' (British Dyslexia Association, 2017) and is comorbid with other neurodevelopmental disorders (Tasman *et al.*, 2015). Several deficits cause the full clinical phenotype of dyslexia (Peterson and Pennington, 2012) and difference in the manifestation of behavioural symptoms is due to sub-sets and severity of the condition (Reid, 2016).

Dyslexia's can cause peripheral reading impairments with deficits in orthographic-visual analysis. This can be with or without phonological reading impairment in the central later stages of the lexical and sublexical routes (Lobier, Zoubrinetzky, and Valdois 2012). The heterogeneity of dyslexia holds problems with spelling for some people, whilst others have multiple deficits with auditory processing, plus or minus visual-spatial perception deficiency (Vidyasagar and Palmer, 2010), plus or minus verbal articulation disorder (Rayner *et al.*, 2012). As a complex multifactorial disorder (Bishop, 2015) for individuals the signs, symptoms and executive function vary considerably in the extent.

People with dyslexia are a minority in UK society with estimated numbers around one in every 10-20 people or 5-10% of the population (NHS Choices, 2015a). It has been estimated that as much as 20% of populations might have dyslexia (International Dyslexia Foundation,

2017). Biological testing is unavailable (Holger *et al.*, 2010) and the condition is diagnosed with a battery of psychological behavioural tests.

The sub-types of dyslexia are an ‘unsettled science’ with multiple differing perspectives within a broad transdisciplinary range of scientific researchers (Smith and Ceusters, 2010). However, the growing body of evidence within the field shows that comprehension learning systems fail to build or retain a fully specified representation for lexical and or linguistic input. As a result, the construction of underspecified representations may lead to erroneous interpretations, and comprehenders sometimes construct interpretations that reflect pragmatic knowledge rather than the grammatically licensed meaning of the input.

I used a systematic approach, as advocated by Aveyard (2014) to search and obtain peer reviewed published primary research literature. My search was conducted through a total of 15 university library catalogue electronic resources including; BNI, CINAHL, EBSCO and Science Direct. My inclusion criteria consisted of articles published in English. I used the PICO method of problem, intervention, comparison and outcome (Richardson *et al.*, 1995) to define my keywords including; ‘clinical learning environment,’ ‘student nurse’ and ‘dyslexia.’ I truncated

words including; nurse/nurses/nursing = *nurs\$* and mentor/mentorship/mentoring = *mentor\$*. I furthermore mixed and matched all of my keywords to search for combinations using the two Boolean operators; 'AND' and 'OR.' I also set date limits of 2007 - to - 2017 to source academically acceptable contemporary literature.

My searches revealed 18 publications covering nine different research studies that all used Chan' survey for their data collection (Chan, 2000; 2001). Research on a cohort of participants with a positive dyslexia diagnosis had not previously been undertaken using Chan's data collection tool (2000; 2001) or with Salamonson *et al.*'s (2011) abbreviated version. Therefore mine was the first study to use these instruments.

I also sourced six research articles on my phenomenon by fellow nurse researchers. I used the structured framework of a 10 questioned tool (CASP, 2014) to assess the quality of this research and summarised my analysis into an adapted preferred reporting items for systematic reviews and meta-analyses or PRISMA checklist (Moher *et al.*, 2009). This literature revealed that the experiences of being a student nurse with dyslexia in practice placements was unknown in terms of the

‘sustainability, equality and diversity’ (LSBU, 2017) and I was the first researcher to enquire on this.

I used a mixed-method explanatory approach (Plano Clark and Ivankova, 2015; Hay, 2016). This was guided by interpretative ontological phenomenology methodology (Matua and Van Der Wal, 2015; Agrey, 2014). My open research questions (Willig, 2013) were; what was the lived-experience and what did it mean to be a student nurse with dyslexia on practice placements? I systematically uncovered the structures and particular manifestations of what it was like “being-in-[this]-world” (Heidegger, 1962, p. 33).

I used an explanatory sequential design (DeCuir-Gunby and Schutz, 2016) formed with a qualitative explanatory core component of interview method (Gubrium *et al.*, 2012). First I developed a quantitative research design (Edmonds and Kennedy, 2016) using descriptive survey enquiry (Hartas, 2015) with psychometric methods (University of Cambridge, 2015). This generated valid first-person retrospective and subjective information on the students’ own practice placement perceptions (Merleau-Ponty, *in Cobb translation by Edie* 1964).

I conducted my interviews after my supplementary quantitative e-survey was completed by my participant (Morse and Niehaus, 2016). I did it in this order because the single “snapshot” data from my e-survey (Knowles, 2010a) provided me with a useful guide to triangulate (Andrew and Halcomb, 2009) into my prospective qualitative enquiry of interview (Cohen, Manion and Morrison, 2017, p. 213). I used qualitative enquiry (Parahoo, 2014) to generate verbal first-person accounts with one-to-one audio-recorded interviews (Given, 2015). I collected positive and negative subjective data on experience (Langdridge and Hagger-Johnson, 2013) and problems that were encountered (Cohen, Manion and Morrison, 2017).

Chans survey instrument (Chan, 1999) has good methodological properties and Salamonson *et al.*'s (2011) abbreviated version of Chan's questions (2001) holds excellent psychometric properties as a standardised survey tool (Mokkink *et al.*, 2010). I used this in the form of an e-survey (Knowles, 2010a) as the instrument to reveal my participants attitude response to pre-set criteria. Participants were limited to judging how (strongly) disagreeable or agreeable the answers were in relation to the questions provided.

I used a method of ontology-interview (Gubrium *et al.*, 2012) to find out 'what' my participants had actually experienced (Smith and Ceusters, 2010). I used some of Chan's survey questions (Chan, 2001) with the addition of his qualitative research questions (Chan, 1999) to seek my participants' independent, spontaneous responses to my phenomenon in a valid way (Green, Camilli and Elmore, 2012).

I was granted full ethical approval for my study from the universities research and ethics committee where I was enrolled as a student (Knowles, 2012). The issues I applied during my study were autonomy including voluntary participation, confidentiality and no harm or opposes to the welfare or beneficence of my participants (RCN, 2009; WMA, 2013). Participation involved implied consent by voluntary choice of clicking onto and completing my e-survey (Knowles, 2010a; WMA, 2013). I sent my study information to prospective participants at least 24 hours before the informed written consent with me pre-interview (BERA, 2011).

I acted as controller and custodian of all my research study information (Great Britain. Data Protection Act, 1998). My participants were able to access their own research data from me at any time (Great Britain. Freedom of Information Act, 2000). My e-survey (Knowles, 2010a) data

was only used for my thesis report and will also be used for subsequent publications (RCN, 2009) and individual surveys will not be shared (Great Britain. Data Protection Act, 1998).

Anonymity and confidentiality of sensitive information was guaranteed (NMC, 2015a) by participants not using any names of practice placement areas or staff, including stage-two mentors (NMC, 2008). All participant data was allotted a participant number with a pseudonym for my interview participants and the participants' names were not used. All study information was stored on a password protected personal computer (RCN, 2009) that only I had access to (Great Britain. Data Protection Act, 1998). As a vulnerable group of people (BERA, 2011) I applied safeguarding measures at interview (ESRC, 2017) and some participants indicated that they would seek support from DDS, student advices or their Personal Tutors.

Three-year, full-time undergraduate BSc. (Hons.) nursing courses in approved universities lead to registration with the NMC (2016a) and the nurse registrant is then accountable to the NMC (2015). This involves a 4,600 hour curriculum (NMC, 2010) with half of the student's course being theory taught and assessed by stage-four lecturer/practice educator (NMC, 2008).

The other half of the coursework is on practice placements in an un-paid supernumerary capacity with a 37.5 hours clinical learning environment attendance per week (NMC, 2010). Students are allocated one-to-one support with a stage-two nurse mentor (NMC, 2008) for practical assessment of competence in nursing skills (Benner, 2001). Placements range in duration from two to 12 weeks within NHS acute and community healthcare services including clinical services provided by the private, voluntary and independent healthcare sectors. Stage-four lecturer/practice educators (NMC, 2008) from the university link with these partnership placements and monitor their capacity and quality through educational audit (NHS-HEE, 2017).

My prospective participants were identified by the universities DDS team through the locally held database of students with a formal dyslexia diagnosis. The DDS administrators communicated with students on my behalf. Those who participated in my study were not known by either party. My e-survey (Knowles, 2010a) systems were anonymous and could not be tracked to participants (Great Britain. Data Protection Act, 1998). A total of five e-mail calls for participants, including reminders, were made by DDS staff on my behalf.

Although I am a nurse educationalist I was a student-researcher of a different university and I was therefore not an employee of the university where recruitment took place. I recruited to my e-survey (Knowles, 2010a) with a cross-sectional convenience sample. My self-selecting voluntary participants came from a defined population of $N=126$ who held the shared characteristic categories of being pre-registration student nurses with dyslexia (LSBU, 2007/8). I used stratified sampling (Cohen, Manion and Morrison, 2017) to recruit my $n=64$ participants from $N=126$ population who represented 12.93% of pre-registration nursing students with dyslexia within the local overall 974 student body on this course (HESA, 2010).

I assessed the fairness and inclusivity of my research recruitment processes (Equality and Human Rights Commission, 2011a) with statistical measurement (Banerjee and Chaudhury, 2010). I found that I had a diverse voluntary sample-group (Palinkas *et al.*, 2015) without any gaps (Chamberlain, 2014 *cited in* Hefferon *et al.*, 2017). So although they were a smaller number of people (Johnson and Christensen, 2014) my participants showed a typical likeness to my population under study (LSBU, 2007/8).

I purposefully (Palinkas *et al.*, 2015) opted to invite all $n=64$ quantitative research participants to discuss their experiences of my phenomenon in a one-to-one interview with me. Each and every participant had an equal chance of self-selecting (Roy, Acharya and Roy, 2016) and $n=8$ participants did this and this small number was methodologically sufficient (Fletcher, 2017).

I collected data using the retrospective descriptive e-survey (Knowles, 2010a) as an abbreviated instrument (Salamonson *et al.*, 2011) containing 19 of Chan's questions (2001). The questions were on the participants' actual support for learning and perception of satisfaction with the practice placement environment. My participants self-record their own value nominal responses to my e-survey (Knowles, 2010a).

I had a key role in the overall process of shaping my qualitative raw data (Willig, 2012), therefore in advance of my semi-structured interviews taking place I devised an *aide memoire* "thinking tool" (Giddings and Grant, 2007, p. 54) and I used this as a prompt. I worded it to keep my data collection open (Edmonds and Kennedy, 2016) and gave my participants the opportunity to say anything they thought important when it came to discussing their experiences on my phenomenon.

At interview I asked each participant to think about a specific instance, situation, person or event to describe (van Manen, 2016). I asked what was most important to them about their functions and feelings in relation to my phenomenon (Langdridge and Hagger-Johnson, 2013). Each student constructed meaning of their practice placement lived-experience according to their own identity and context (Guest, Namey and Mitchell, 2012).

I used SPSS 20® (IBM®, 2016) to organise and calculate my $n=64$ participant's data with a 50.8% survey completion rate out of $N=126$. I applied Chan's (2001) Likert-scale (Likert, 1932) and Chan's reverse Likert-scale (Chan, 2001) as allocated and I calculated that the total sample-group variance of responses held a confidence level of 95% and an interval or margin of allowable error of plus 5% to minus 5% with a standard deviation of the variable of 10.17 (Hulley *et al.*, 2013, pp80). This provided forceful conclusions in indication of my population value (Kass, 2011).

I undertook descriptive statistical quantitative analysis of my data to measure the characteristics of practice placements according to my participants' perceptions (Merleau-Ponty, *in* Cobb *translation by* Edie 1964). My data was statistically reliable to calculate the confidence level

of the mean of the results for a mean estimation of my defined population (Kass, 2011) and I interpreted inferences from it (Abbott, 2016).

To collate and showcase qualitative individual detailed accounts I uploaded my transcribed interview datum-sets onto an Excel™ spreadsheet (Microsoft® Office™, 2013). I familiarised myself with my participants experiences by repeatedly reading them and listening to the audio-recordings of their descriptions spoken at our interview.

I was seeking emergent themes and I made “initial noting” (Braun and Clarke, 2013, p. 202) one datum item at a time and annotated brief commentaries. I identified subordinate themes by counting the occurrences of these across my whole sample-group data-set (Braun and Clarke, 2013). Whilst doing this I was developing my ‘concept-book’ of key issues that I noticed in my data (Brenner, Brown and Canter, 1985). I searched for connections across the themes from within each datum-set (Thorne, 2016). I analysed the subtle nuances and intricacies of my participants first-person lived words and their verbal expressions of this (Willig, 2013), thereby I focused on my participants’ use and meaning of language in describing their experience (Schleiermacher, *translation* by Bowie, 1998).

I am a nurse educationalist (NMC, 2008; NMC, 2015) and 'R1: first-stage researcher' (European Commission. HORIZON-2020, 2017) who has developmental dyslexia. I applied my *a posteriori* knowledge (McConnell-Henry, Chapman and Francis, 2009) to enable interpretative phenomenological analysis (Wertz *et al.*, 2011; Reiners, 2012; Thorne, 2016). I examined my interview transcripts for particular instances of psychosocial experience that were consciously and meaningfully lived (van Manen, 2016) by my participants. Then I made subjective interpretations (Reed and Pease, 2017) noting what I thought my participants' experience was about (Braun and Clarke, 2013).

I conceptually interpreted my data into meaningful information including key themes and areas from within the realm of social justice from my doctoral degree on diversity, inclusion and equality (LSBU, 2017). I made inferences about understanding the lived-experience of these students (Braun and Clarke, 2013) and this synthesised new knowledge about my sample-groups experiences of my phenomenon (Parahoo, 2014).

My results demonstrate a detrimental difference in the specific outcomes measured in this study for student nurses with dyslexia. These results may inform stage-two mentors and stage-four lecturer/practice

educators (NMC, 2008) *a priori* knowledge and *a posteriori* understanding on the standard practice placement environment required to enable and maximise learning for nursing students with dyslexia. NMC approved universities (NMC, 2016a) may use my research for evidence-base policy development. This can be to improve the resources of link-lecturer and champion support by stage-four lecturer/practice educators (NMC, 2008) and tailor practice placement pedagogy to be more inclusive of the needs of these students. My research results and findings can therefore be used to contribute to shaping a more equal, just and inclusive functioning body of nursing professionals (NMC, 2015).

The NHS health education commissioning bodies (NHS-HEE, 2016) may consider my findings on reasonable adjustments (Great Britain. Equality Act, 2010) and allocate more resources for greater effectiveness of stage-two mentor support (NMC, 2008) for nursing students on practice placements. My findings produced new knowledge that may also be used to inform on the allocation of disabled nursing student allowances from Student Finance England (DSA-QAG, 2016). These will enable necessary reasonable adjustments in practice placements during undergraduate BSc. (Hons) studies whilst at university.

Since its development and validation in 1999, Chan's 'clinical learning environment inventory' research tool has been used in 22 different studies in 10 different countries across five continents and with quite similar results in both total and subscale scores. That was until my participants as a community of student nurses with dyslexia completed it (Knowles, 2017). I compared my results to these studies discovering that my participants had a comparatively negative perception of the actual support for learning along with a negative perception of satisfaction with the practice placement environment (Salamonson *et al.*, 2011).

Through interviews I discovered directly from my participants' lived-experience what it actually feels like to be a student nurse with a dyslexia deficit in practice placement (Langdridge and Hagger-Johnson, 2013). I now know what concerns my participants most (van Manen, 2016) and I have found out 'why' they experienced poor quality of practice placements and inappropriate mentor support the way that they do (Smith and Ceusters, 2010).

I entered the world of my phenomenon and uncovered the wisdom, possibilities and understandings held by my participants (Polit and Beck, 2012). I now know about the unique psychosocial dynamics of interpersonal relations regarding my phenomenon between stage-two

mentors (NMC, 2008) and students. I now understand why my participants feel and behave the way they do (Hartas, 2015). I compared the other researchers' primary research findings from their six studies with my own and sought out the new knowledge that my study had illuminated on issues of social justice (LSBU, 2017).

Resource limitations of time constraint did not allow me to systematically review (Higgins and Green, 2011) or meta-analyse (Deeks, Higgins and Altman, 2011) or meta-summary (Sandelowski *et al.*, 2007) the scientific brain-based research on what dyslexia is and to a degree this limits the discussions within my study findings. However this substantial piece of work would need a multidisciplinary team of researchers commissioned by an interested party such as the World Health Organisation for the evidence-base of dyslexia to underpin their ICD-10 classification of dyslexia (WHO, 2016).

I acknowledge that an additional larger and well-resourced study would provide a broader perspective toward completing the clinical learning environment landscape of understanding my phenomenon. My study is limited to pre-registration nursing participants and could have included other groups of health care students with dyslexia. A holistic study would include these or alternatively the stage-two mentors of my participants

along with the stage-four lecturer/practice educators (NMC, 2008). My participant recruitment was limited to just one UK capital city university without other inner-city or rural representation. Recruitment of participants from other NMC approved universities (NMC, 2016a) and wider geographies would add value to the representativeness and generalisability of my research to more populations of student nurses with dyslexia (Harvey and Land, 2016).

My participants had a prior knowledge of my study intent as they were well informed with my 'participant information sheet' (Knowles, 2010d) and therein lay a risk of researcher influence (Sekaran and Bougie, 2016). My data may resultantly be limited by volunteer bias (Trochim, Donnelly and Arora, 2016). My research study volunteers are likely more motivated and concerned about perceptions and experiences on my phenomenon than non-volunteers (Shye, 2010). They may have acted purposefully with something in mind to contribute (Mayo, 1945).

Retrospective enquiry is reliant on participant memory and recall and another limitation is a risk of memory bias (Mitchell and Greening, 2012). My participants likely recalled more fond or positive memories of their practice placement and stage-two mentor-student relations than negative ones (Anderson and Bower, 2014).

Phenomenological enquiry is limited in that there can be no exact study replication (Matua and Van Der Wal, 2015). This is because each of my qualitative datum-set items was limited to one of my $n=8$ participant's first-person unique description of their experience. My participants may have experienced some memory deficit as this can be a challenging executive function in people with dyslexia (Crouch, 2008; Child and Langford, 2011 and Anderson and Bower, 2014). As my data collection was reliant upon my participants' memory of their lived-experience it may have limited their rich descriptions (Cohen, Manion and Morrison, 2017).

I applied reflexive limitations on what I reported (Johnson and Christensen, 2014) and I did this within the framework created in my 'concept-book' (Brenner, Brown and Canter, 1985). As a solo phenomenological interpreter the synthesis of my findings was always self-limited (van Manen, 2016). Also as I have dyslexia my interpretations were humanly limited by the capacity of my short-term working memory (Martinez Perez, Majerus and Poncelet, 2013).

Like fellow researchers in the field, I did not differentiate the sub-groups of dyslexia in my study and some of the severe problems with executive function deficit (Pennington *et al.*, 2012) described by my participants may not be generalisable to some students with a different sub-type of

dyslexia (Thorne, 2016). Equally, the collective participant-group findings of my study might mask the severity of how some sub-type dyslexia deficits affect some student's executive function in practice placements (Hartas, 2015). Additionally, in my study, IQ was not differentiated as a correlation to individual participant problems with executive function (Gresham and Vellutino, 2010).

Despite these limitations I discovered something worthwhile saying (van Manen, 2016) and uncovered the "way things should be changed" (Meighan and Harber 2007 *in* Ellaway, 2016, p. 502) for practice placements to become increasingly diverse, inclusive and equitable to bring beneficence to student nurses with dyslexia. Nursing students who have dyslexia have a right to inclusive education (OHCHR, 2016) and preparatory mentoring education must change for stage-two mentors to establish effective working relationships (NMC, 2008) with nursing students who have protected characteristics such as dyslexia (Great Britain. Equality Act, 2010).

My study identifies alternative actual practices of stage-two mentoring (NMC, 2008) of student nurses that provide greater social justice (Denscombe, 2014) and enhance human potential to improve on the protection of these vulnerable people (Eizenberg and Jabareen, 2017).

My research is therefore transformative (Mertens, 2009) and I am in a position to effect professional changes (Dewar, 2016).

For high-impact translational results and findings (Watermeyer and Hedgecoe, 2016) I encourage other like-minded stage-two mentors and stage-four lecturer/practice educators (NMC, 2008) to uphold article 14 in the Human Rights Act (Europe. Human Rights Act, 1998) and to challenge discrimination to reduce inequalities and advance equality (Great Britain. Equality Act, 2010). Collective contributions will recognize and address any shortcomings and deficiencies of mentoring practice with sweeping reforms and work to establish the “way things should be” (Meighan and Harber 2007 in Ellaway, 2016, p. 502). In support of this I plan to publish my research in peer reviewed journals and speak publically to nursing education and healthcare personnel, non-specialist audiences and disability rights stakeholders.

Education on dyslexia and reasonable adjustments in practice placements for stage-two mentors can be included in approved preparatory mentorship training course (NMC, 2008). The education of existing stage-two mentors can be included in annual mandatory mentor updates (NMC, 2008). I urge the NMC as a regulator of its registered nurses to regulate inclusive mentoring (NMC, 2008; OHCHR, 2016) of

student nurses with dyslexia. This can be achieved and measured with inclusive education incorporated into the mentor's triennial review to enable continuation on the local register of live mentors (NMC, 2008).

I estimate that somewhere between 150,000 - 300,000 people with dyslexia work for the NHS (NHS England, 2016; NHS Choices, 2015a) a proportion of these will be stage-two mentors (NMC, 2008). It would be a positive step toward inclusive education (OHCHR, 2016) to make efforts to match a student with dyslexia with a stage-two mentor with dyslexia for the duration of their practice placement. Otherwise the match could be with a stage-one co-mentor (NMC, 2008) who has dyslexia. I hypothesise that nurse registrants with the protected characteristic of dyslexia (Great Britain. Equality Act, 2010) would likely choose the virtuous power for a pedagogy of inclusion (Gotsis and Grimani, 2015) for students with the protected characteristic of dyslexia (Great Britain. Equality Act, 2010).

My hypothesis could be tested with qualitative methodology research to find out whether students then feel less isolated and less excluded (Equality and Human Rights Commission, 2016e). This could investigate whether student's reasonable adjustments are championed with active use of their auxiliary aid equipment (DSA-QAG, 2016). Stage-one/two

co/mentors of student nurses with dyslexia may more readily achieve the mentorship standard domain one; “Establishing effective working relationships” (NMC, 2008, p. 25) for those with this protected characteristics (Great Britain. Equality Act, 2010). It is possible that nurse registrants with dyslexia may be less likely to show prejudice toward and devalue students with dyslexia (Abrahams, Swift and Mahmood, 2015).

The NHS public sector landscape must change and to avoid potential confusion the NHS should not have been remiss in their exclusion of those with dyslexia as a group of disabled “individuals who may have difficulty in reading or understanding information” in the patient and carers accessible information project (NHS England, 2015b, p. 20). But there are greater shortcomings to ensure lawful behaviours by all employees and by the NHS as an employer (Great Britain. Equality Act, 2010).

Prejudice must be tackled between people who do not share a protected characteristic toward those who do (Equality and Human Rights Commission, 2011b). Direct and indirect discrimination (Great Britain. Equality Act, 2010) must be regulated through healthcare professional and employment policy and procedures. Unlawful acts may be

prosecuted through employment tribunals to bring the perpetrators to account and serve to reduce disability discrimination of nursing students in NHS practice placements.

To collect meaningful NHS metrics on the discrimination of NHS disabled staff and in preparation for data collection to commence in 2018 the NHS Review of Equality and Inclusion Strategy (2016) will advisably categorise different forms of disability i.e. SpLD. To furthermore sub-categorise into metrics collected from those with dyslexia would bring the potential for measurable improvements for those who have this protected characteristic (Great Britain. Equality Act, 2010).

By virtue of my research I helped students to teach me about their placement experiences. I now have a fuller and greater understanding of my phenomenon and effective pedagogy for this community. My *a posteriori* knowledge will continue to serve toward increasing my thoughtfulness toward others with dyslexia and being better prepared to be tactful in my behaviour toward them. In turn, my research helps students to reflect on their understanding of their own dyslexia and application of their reasonable adjustments within their practice placements. I now have a resource on the current evidence-base of

dyslexia within my thesis report that I can use to share with others to help with their understanding on the condition.

I have learned about interpretative phenomenology research (Reiners, 2012) by actually doing it and I now have a greater understanding of it. I have acquired some experience in the disciplines of quantitative and qualitative methodologies and mixed methods that I can use in future research and in teaching students. My thesis is also a resource on human science research design and process that I can use extracts from as examples when supervising my students.

I empowered my participants to expose the effects experienced with dyslexia and their world of social injustice (Brabazon, 2015). I recorded a profound and detailed understanding of what it actually feels like to be a student nurse with dyslexia and I have generated new knowledge that is worthwhile to the nursing community (FHEQ, 2008). In the NHS and nursing education dyslexia requires a higher profile and I want to contribute to shaping a more just, inclusive and equal society (Great Britain. Equality Act, 2010) for communities of nursing students with dyslexia.

I aim to increase the global external validity of my research results and findings (Knowles, 2017) and work in partnership with fellow researchers who are interested in my field of study. For fellow clinical learning environment researchers I reported my results in a way that those who work with statisticians will be able to use my study to estimate the growing evidence of the psychometric properties of Salamonson *et al.*'s (2011) survey instrument (Mansutti *et al.*, 2017). I also hope that the knowledge base on my phenomenon (Knowles, 2017) will be developed by both national and international fellow researchers.

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11.0 Appendices:

11.1 University Research Ethics Committee approval letter



Direct line: 020-7815 6024
E-mail: dippenas@lsbu.ac.uk

Ref: UREC 1134

Miss J Knowles
Student Researcher (EdD)
London South Bank University

5 August 2011

Dear Judie,

Thank you for submitting this proposal and for your response to the reviewers' comments.

I am pleased to inform you that ethical approval has been given by Chair's action on behalf of the University Research Ethics Committee.

I wish you every success with your research.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Dippenaar", with a stylized flourish underneath.

Sharon Dippenaar on behalf of Prof. Curzio, Chair, LSBU Research Ethics Committee

cc: Prof. Joan Curzio, Chair, LSBU Research Ethics Committee

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11.2 Research Sub-Committee registration of research proposal approval letter



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5 March 2012

Miss J Knowles
[Redacted]
[Redacted]
[Redacted]

Dear Judith

Registration of your Research Propsoal

The clarifications made to your research proposal for the Professional Doctorate in Education were reviewed by the Chair of the Sub-Committee, who took Chairs Action and recommended approval. The recommendation for approval was submitted to the ESR sub-committee at its meeting on 13 February and approval was ratified.

Best wishes

PP *Stamper*

Prof. Michal Lyons, Chair
Economics and Social Research Sub-Committee

Cc: Prof M Lyons
Dr B Goring

11.3 CASP Morris and Turnbull (2006)

Screening Questions

1. Was there a clear statement of the aims of the research? Yes

To explore the clinical experiences of student nurses with dyslexia and its potential influence on their practice as widening participation means that more students with dyslexia study nursing. 50% of student nurses time was spent on placements and there was no research into students with dyslexia on clinical placements.

2. Is a qualitative methodology appropriate? Yes

The methodology was not discussed but the research interprets the subjective experiences of the researchers' participants.

Detailed questions

Appropriate research design

3. Was the research design appropriate to address the aims of the research?

The researchers state that this was an exploratory study that used thematic analysis. Other options of methods for data collection and analysis were not discussed.

Sampling

4. Was the recruitment strategy appropriate to the aims of the research?

Sixty-seven current pre-registration students at the researcher's workplace with a formal dyslexia diagnosis were contacted by letter via staffs who manage a confidential database with the details of students with dyslexia. The researcher's participants were a convenience sample and twenty-two responded and eighteen went ahead with a tape-recorded interview during 2003/4. All eighteen were first and second years it was not divulged if and why third years were excluded. Four of the twenty-two did not go ahead with the researcher's interview citing reasons of fear of disclosure, ridicule and opening old wounds. Twelve of the eighteen interviewed were diagnosed since starting the nursing course and six were diagnosed before.

Data collection

5. Were the data collected in a way that addressed the research issue?

Interviews took place in the university setting for a 'confidential and convenient environment.' Individual in-depth audio-taped interviews lasting 30-50 minutes using an open question; "Could you tell me about your clinical experiences and whether you feel your dyslexia has influenced this?" Further discussion depended on the researcher's participant's response to this and an *Aide Memoire* was also used:

- Effects on everyday practice
- Relationship with others
- Positive and negative clinical experiences
- Perceived strengths and/or limitations
- Safety – personal/patient

Reflexivity (research partnership relations/recognition of researcher bias)

6. Has the relationship between researcher and participants been adequately considered?

Widening participation means that more students with dyslexia study nursing was an assumption that has not been statistically proven by the researchers. The researchers acknowledge a RCN research scholarship award but did not discuss the role of this stakeholder in their research. The researchers discuss screening of all recruits during recruitment to nursing programmes arguing that those with severe dyslexia were not fit to practice and should be excluded for fear of public safety. However there was no research to support this and the researchers did not state whether this view was formed before or after the study findings and whether it was their own view or the view of the stakeholder. On self-reporting the influence of dyslexia on clinical practice the researchers state that this may have been censored by participants as the researcher's participants were known to the researchers. However the researchers go on to state that participants were informed that breaches of NMC code would require further investigation. I think that this strategy arguably allows only a participant who wishes to be potentially discontinued from their nursing studies to speak openly and frankly to the researchers about all of their experiences without self-protective censorship.

Ethical Issues

7. Have ethical issues been taken into consideration?

Ethics committee approval and access to participants was agreed with the programme managers. Access to participants was via database staffs to maintain data protection law. Pseudonyms were used to disguise the researcher's participant's identities for the direct quotations from interviews in the publication.

Data Analysis

8. Was the data analysis sufficiently rigorous?

Interviews were transcribed verbatim and read independently by the two researchers who each formed categories using Morse and Field (1995) thematic analysis. Aiming for validity and reliability researcher discussion modified the categories that were then colour coded and cut from the transcripts and re-coded into eleven categories. Commonalities resulted in five themes. The study findings were discussed with seven participants.

Findings

9. Is there a clear statement of findings?

Disclosure – 6/12 discussed their dyslexia from the outset. 12/18 experienced discomfort with disclosing dyslexia to mentors and clinical staff. 6/12 disclosed when one or both parties recognised a need for support. 6/12 did not disclose. Reasons included discrimination and ridicule.

Managing difficulties on placements – this was personalised; Four with short-term memory problems use a reminder pad or voice recorder. Tape-recorded handovers were useful to replay during the shift to confirm or clarify information. Three with poor information recall use avoidance such as not answering the telephone or hiding in toilet when others were not available to help. This poor practice was particularly evident in those who had not disclosed their diagnosis. Four with hand/eye co-ordination and manual-dexterity problems borrowed equipment to practice at home. Eight with dyscalculia used pre-prepared drug calculation tools and checked with mentors.

Time – Five would value more time in an undisturbed place to complete documentation and want less distractions for activities and this was not always tolerated by placement staff.

Emotional – Six did not want to be considered different from their peers without dyslexia and two did not accept their diagnosis. Positive aspects of dyslexia were not raised by participants and weaknesses rather than strengths were associated with dyslexia and those who lacked confidence were not able to assert themselves.

Future employment – Two preferred acute quick work environments with a fast turnover where they can avoid short-term memory problems whilst sixteen prefer a slower pace and find less acute environments provide more satisfying work

experiences. Two were concerned about returning to their seconding Trust workplace as they now have heightened awareness of their accountability as a registered nurse and the required literacy and numeracy skills.

Value of the research

10. How valuable is the research?

The research establishes that whilst there was academic support for student nurses with dyslexia there was not standardised clinical support. This would hold difficulties as students with dyslexia can choose not to disclose their diagnosis to placement staff. The researchers claim that students with dyslexia were hyper-vigilant on drug administration but this was not compared to a non-dyslexic group. The researchers cite limitations of self-reported data and that actual practice was not observed. They did not explain why they chose not to observe practice and not to include interviews with mentors who have experienced mentoring students with dyslexia. The researchers also state that forty-nine students with dyslexia did not volunteer for interview and that their participation may have changed the findings of the research. Further research recommended was for observations of clinical practice to establish whether student nurses with dyslexia were less safe than non-dyslexic students. They also recommend research on the nature and extent of support available to nursing students with dyslexia.

11.4 CASP Price and Gale (2006)

Screening Questions

1. Was there a clear statement of the aims of the research? Yes

A pilot study to see whether a larger study needed to be conducted on how student nurses with dyslexia cope with clinical practice placements and what impact dyslexia has on their practice. For synergy of support between the academic setting and the practice placement environment and to find out if nurses with dyslexia were safe or if they were a danger to patients.

2. Is a qualitative methodology appropriate? Yes

The researcher asks questions and the researcher's participants share their subjective experiences to analyse and interpret the experiences of students in clinical settings.

Detailed questions

Appropriate research design

3. Was the research design appropriate to address the aims of the research?

An empirical phenomenological study was stated but not justified as the method used was to examine a group of dyslexic compared to a non-dyslexic student nurse experiences. An alternative methodology such as a comparative case study including observation of nursing practice was not considered. In examining the impact of dyslexia on nursing practice and patient safety the researchers have chosen only to study the student's experiences where other groups such as patients, mentors and the nursing regulator (NMC) were potential further sources of phenomena data on the impact of dyslexia on nursing in practice placements.

Sampling

4. Was the recruitment strategy appropriate to the aims of the research?

Open invitation to participate by two versions of letter; one to non-dyslexic students and one to students registered with dyslexia was sent to a convenience sample at the researcher's university. The letters were identical 'to explore issues of learning in the clinical settings' but one version specified dyslexia and was only sent to students with dyslexia. Recruitment was for ten dyslexic and ten non-dyslexic third year adult branch student nurses. Recruitment to the dyslexic group was slow and the researchers state that their letter did not indicate discreet discussion groups without non-dyslexic peers present which may have put some students off. I think that students with dyslexia may also not wish to disclose their diagnosis to peers with dyslexia and therefore did not wish to participate in a peer group focus interview where their diagnosis becomes known by others by virtue that they were also a study participant in the students with dyslexia group.

Data collection

5. Were the data collected in a way that addressed the research issue?

The two focus groups were video recorded for the researchers to analyse non-verbal language however none of this was divulged in the findings. Focus groups were justified as group participants build up information as they react to comments made by other group members and benefit from hearing the worries of fellow students and sharing coping strategies suggesting that participation was to be a learning and therapeutic experience for participants. The questions were embedded in nursing practice and were given in the article:

- Can you identify any problems you have with nursing documentation?
- Particularly can we explore issues about reading and learning drug names/ medical terminology?
- What experiences have you had in writing nursing documentation and what issues bother you?
- How do you cope with nursing handovers and what are the issues for you?
- Do you have problems with learning procedures, for example dressing techniques?
- What about using and understanding the various charts used on the wards?

Reflexivity (research partnership relations/recognition of researcher bias)

6. Has the relationship between researcher and participants been adequately considered?

It was speculated by the researchers that the students with dyslexia experienced greater and more persistent difficulties than their non-dyslexic counterparts on the hospital ward in terms of memory capacity and functional literacy. Such a hypothesis suggests a positivist comparative study research design and does not fit with phenomenological methodology. Elsewhere the researchers state that the interpretative categories they formed were congruent with theory regarding the impact of dyslexia on learning, emotions and performance and the reader of the article may interpret this to suggest that the categories were formed from existing literature rather than from the raw data. The researchers did not critically examine the theories of adult learning used as the framework for data analysis. The questions (see above) were formed from the student's curriculum and the researchers did not examine their role, bias and reflexivity as lecturers delivering this programme to the researcher's participants.

Ethical Issues

7. Have ethical issues been taken into consideration?

The researchers state that the ethical committee regulations were adhered to and they took written consent from participants and to protect the vulnerability of the dyslexic group they were video-taped in their focus group separately. There were other issues of vulnerability that were not discussed such as group identity and confidentiality of information discussed being held by all group members. For example one student who had not disclosed her dyslexia to her mentors on placement and was 5/6 through the programme of study stated that she avoided drug administration and this was a required skill (NMC, 2004). It was not shown how the researchers managed this ethical dilemma with the group and furthermore with the placement mentors who may have been passing the required skills as achieved up to this point in the programme. It was also not known in terms of achieving the competencies of the programme whether this student had any sanctions or reasonable adjustments imposed following this disclosure and whether these were made known to the other group members to ensure integrity of the standards of the programme. Will the video-tape used as evidence if the student was subsequently found to compromise patient safety? Issues raised were not addressed. Many issues of disability discrimination through negative comments, public embarrassment and belittling were raised by participants along with issues of low self-esteem and anxiety over disclosure of diagnosis and the confidentiality of this information out on placements and yet the researchers did not show what if any support was given to the researcher's participants after the focus group session.

Data Analysis

8. Was the data analysis sufficiently rigorous?

It was stated that statements by student were taken at face value and the researchers took *a posteriori* meanings that were clustered into themes. The researchers based their analysis on theories of adult learning as an inductive exploration of knowledge, behaviours, skills, attitudes and feelings in relation to learning seeking to uncover significant patterns or changes evident between the two groups. On examining the questions posed (see above) they were weighted towards skills and

although feelings were expressed the group knowledge, behaviour and attitudes were not evident in the data presented. I think that for this exploration to be achieved the researchers would need to reframe the aims and design of the study. It appears overall that there were two categories analysed and these were those of similarities and differences between the two focus groups.

Findings

9. Is there a clear statement of findings?

I found the study findings difficult to decipher as in addition to a section on 'the dyslexic experience' they were spread throughout the article and were only sometimes substantiated with examples. 9/10 participants disclosed their diagnosis of dyslexia to their placement mentors. The findings from the group of students with dyslexia appear to be different from the non-dyslexic group in that these students experienced the following:-

- Cognitive processing problems; keeping up with the pace of handover was difficult.
- Literacy difficulties; inaccurate spelling.
- Telecommunications; a significant problem of inability to make notes at speed and problems with answering the telephone exacerbated by distractions from background noise.
- Lack of automaticity skills; learning new skills does not come easy.
- Memory problems; difficulties remembering numbers and instructions and tasks need writing down.
- Organisational skills; prefer routine ways of working.
- Nursing skills; difficult to chart results due to the charting space being cramped and there were difficulties in following the charts lines and symbols.

The researcher's participants showed insight into their self-performance and compensatory strategies; some participants read, re-read, use constant comparison and ask for someone to check before they trust themselves to be right; Some ask for a list of words and abbreviations specific to the placement and need to hear these as well as read them to learn them and furthermore they use self-made lists of codes and memory prompts to help them in their practice and documentation of care. Some arrive early to shift to make notes before handover as they were not able to keep up with the real-time pace of it. Some negotiate pacing of their work through allocation of shift responsibilities from their mentors in manageable sections of tasks with new tasks given on completion. Some ask for demonstration of skill and need to see this repeatedly. Some use coloured pens and stickers for diverse tasks. All were concerned about patient safety issues and how they work to ensure that what they did was right by checking and double checking and keep asking if unsure. Disability discrimination; some experienced ignorance of mentors and negative comments with public embarrassment or belittling. Issues of low self-esteem; participants experienced anxiety on the disclosure of their diagnosis and concerns about the maintenance of confidentiality to those whom they had disclosed.

Value of the research

10. How valuable is the research?

The researchers suggest disability awareness sessions for placement staff and recommend that this be delivered via mentorship programmes however I consider that this strategy would exclude most placement staff. They recommend the development of an auditory CD Rom of medical terminology and abbreviations for students to see and hear. Considering regional accents and the use of local terms and abbreviations and the collective number of them in the healthcare profession I consider that this was an IT resource to be developed locally by HEI providers in partnership with their own NHS host Trusts. Rather than specifically a CD Rom students could access this via the appropriate local IT interface. I also think that such a tool may benefit all nursing students and in terms of equality it should not be on limited availability to those only with a formal diagnosis of dyslexia. The researchers state that dyslexia should not present a barrier to entry to the nursing profession but they argue for a sensitive analysis of the diagnostic features of cognitive profiling by a trained professional with knowledge of the demands of a busy working ward and the cognitive architecture that was needed to perform safely in this context. Following on from this there were recommendations for a further study on the development of tools to assess dyslexic nurses' 'goodness to fit'. However this recommendation has resource implications and the researchers did not present an evidence base from their own pilot study findings that patient safety was compromised by nurses with dyslexia. The researchers did not state what has been learned from the pilot in terms of study design and whether the full study will go ahead with or without modifications or whether it was abandoned and if so why.

11.5 CASP White (2007)

Screening Questions

1. Was there a clear statement of the aims of the research? Yes

To determine whether nursing students with dyslexia experienced specific problems in developing clinical competence and identify the strategies they use and how they may be supported on placements. Individuals with dyslexia have varying difficulties in learning how to read, write, spell and may have weakness in relation to processing information, short term memory, sequencing and organising and prioritising activity and problems persist throughout a person's life. Specific learning difficulties pose challenges to the student, academic and mentors in the development of clinical competencies. What if any problems were experienced by nursing students in clinical placements? How did they cope with these difficulties in developing the clinical competencies to become a registered nurse?

2. Is a qualitative methodology appropriate? Yes

This was not specified.

Detailed questions

Appropriate research design

3. Was the research design appropriate to address the aims of the research?

The qualitative case study methodology with some longitudinal methods was explained as investigating the phenomenon of nursing students with dyslexia developing competence in the context of practice placements. Case study was chosen so that in addition to the personal experiences of students the wider context of nurse education and the health service could be considered. The researchers have chosen to ask the students about developing their clinical competence and it was not explained why skills acquisition and the problems encountered and strategies used by students with dyslexia were not observed by the researchers as part of the case study data collection. I consider the research to be rather patchy in its design in terms of what groups of participants were included and excluded within the different methods of data collection used within the 2 stages of research. I found it difficult to guess at a rationale for the design and difficult to follow the data trail in the results and findings. A longitudinal study could be more straight forward to do and easier to follow in the article if the researcher had focused on one collective inclusion criterion. I may be wrong but it appears as if the researcher was stimulated by the dearth of current research and tried to comprehensively cover a full range of participating students, support staffs, mentors and HEI teaching staffs. However I think that the breadth covered was at cost to the depth covered. In 'determining whether students with dyslexia experience specific problems in developing clinical competence' (White, 2007:35), the researcher could have undertaken three in-depth studies examining the students perspective; the mentors perspective and also the academics perspective. These need not have been by longitudinal design but could have taken the same time span to complete. I think such an approach would have yielded rich and specific results within three published articles that would be interestingly distinguishable or similar in their perspectives.

Sampling

4. Was the recruitment strategy appropriate to the aims of the research?

Stage 1 a convenience sample from the researcher's university of three students along with four students from another university sharing the same host NHS Trust placement areas. There were also three specific learning needs support officers from the researchers HEI and eight academics and nine mentors. Stage 2 involved all four students who declared a diagnosis of dyslexia from one cohort of studies (2x adult, 1x learning disabilities & 1x mental health branch). However the researchers state that it was likely that some students were excluded as they chose not to disclose. In addition seven purposefully selected mentors (one from second year along with one from third year for each of the four students) were asked to discuss strategies used to support their student. There were seven instead of eight mentors as one adult branch student withdrew from the study at the end of second year due to maternity leave.

Data collection

5. Were the data collected in a way that addressed the research issue?

Stage 1 was collected between July-November 2003 and involved seven second and third year students participating in semi-structured interviews. The varied method of interview data collection was not explained as four were conducted by individual interview and three by focus group. It was noted that four were from another HEI but it was not known which method was used for these students and whether that was relevant. Interviews were also conducted with three specific learning needs support officers from the researchers HEI and eight academics. Postal questionnaires were completed by nine mentors. It was not stated why postal questionnaires were used for this group instead of interviews. It was also stated that the HEI policies for selection and support of students with disabilities was reviewed. The findings in stage 1 were used as a guide for data collection for stage 2. Stage 2 data was collected between September 2003 and July 2005 this commenced with an interview to record the life history of learning difficulties of four students at the start of their second year. They were subsequently interviewed on five occasions throughout their second and third year after each placement to discuss difficulties and strategies to overcome difficulties. Data was also collected via semi-structured interview from seven of the student's mentors to identify the problems encountered and placement support given.

Reflexivity (research partnership relations/recognition of researcher bias)

6. Has the relationship between researcher and participants been adequately considered?

There was no evidence of the researcher examining her own values, beliefs and bias or any examination of issues on her role as a Nursing Officer at the Welsh Assembly and whether this very senior position was her role during the research. The researcher has not given any example of the questions asked on the postal questionnaire or interviews and whether these were the same for the researchers participant groups.

Ethical Issues

7. Have ethical issues been taken into consideration?

Ethical permission for the study was granted by two local research ethics committees (NHS Trusts) and one HEI. It appears that ethical permission was not obtained from the other HEI for the four participants of stage 1. It was stated that designated support staff officers in the university obtained permission to ensure data protection of diagnosis, but it was not explained how this was done for the four stage 1 students from the other HEI. It was noted that in stage 2 the seven mentors were approached with the expressed permission from the participating students. There was no further information on ethical issues such as confidentiality, beneficence, harm and volunteering given.

Data Analysis

8. Was the data analysis sufficiently rigorous?

After transcription each interview was coded into themes and patterns using NVivo software (NVivo 8®, 2010). Areas of similarity and contrast were sought and evidence of relationships between events, environments and behaviours was sought.

No other information was given on data analysis and it was not made clear how the sets of data from participating groups within the case was similar or contrasting and what matrix the data formed and how this was pattern matched into case study results.

Findings

9. Is there a clear statement of findings?

The findings were not clearly stated and were spread over several pages, the researcher fails to give evidence from her research data to support her claims and it was not revealed whether the trustworthiness of her findings were examined by her participants or another party. All students in the study have some problems in placements as a result of having dyslexia and the range and severity of the problem was unique to the individual and was found to be exacerbated by:

- Limited vocabulary and unfamiliar words
- Time pressures and demands for speed
- Distractions and noise affecting concentration
- Discrimination by unsupportive and negative attitudes

The stigma of dyslexia affects the researcher's participant's confidence and self-esteem and had a negative impact on their self-image and self-worth. Disclosure of the diagnosis of dyslexia was a cautious conscious decision and whether or not it was made depended upon previous experiences and fear of discrimination. Contextual circumstances where specific help was needed may enable disclosure.

Specific problems found in practice placements were around:

- Clinical information - handover was too fast to make notes; reading handwriting was slow and difficult and text was read a number of times to gain comprehension; nursing documentation issues with spelling and untidy child-like handwriting; pronouncing long unfamiliar or unusual words was difficult.
- Clinical performance – remembering to do things was affected by poor short term memory and short concentration span; verbally passing on complicated instructions if difficult due to difficulty in remembering detail; organising complex workload and tasks such as discharge planning was worsened by filling in forms and writing letters; co-morbidity of dyscalculia compounds drug administration.
- Development of clinical competence was enabled by a dyslexia friendly working environment and depends on the student's individual needs and relationships with mentors.

An enabling practice placements was found to be of:

- Substantial continuous placements that were not broken up by holidays and HEI weeks
- Small, close knit teams with an open, friendly and relaxed atmosphere allow student to get to know staff and disclose
- Small patient numbers with infrequent changeover allow student to get to know patients.
- Clear work protocols and structured routines allows student to focus on patient care without worrying about remembering differing ways of working
- Highly structured tick box paperwork with minimal free text space allows student to complete documentation.
- Pre-printed handover sheets minimises the need for note taking during handover.

Students developed coping strategies that require equipment and a support network:

- Shorthand, abbreviation and colour coded notes
- Use of coloured paper or overlay tint to clearly see writing
- Pocket dictionary/spell checker
- Seek a place away from noise and distractions to concentrate on writing
- Reference to terminology and abbreviations via pocket notes and ward resources
- Practice saying and writing new words
- Asking for checks on spelling, pronunciation, calculations, reports and forms
- Asking for clarification
- Arrange work with sufficient time to complete each task
- Vigilance and caution with drug administration some match prescription chart drug word with drug label letter by letter
- Rehearsal of handover

There was found to be resistance from placement staff on the use of handheld IT with issues of patient confidentiality raised. Students cited a lack of dedicated support staff during placements and shift work and travel make it difficult to get to the HEI for support during placements.

Effective working relationships with mentors involved:

- Identification of strengths and weaknesses and for challenges to be set so that the placement experience was not over-restrictive.
- Encouraging and supporting coping mechanisms for daunting tasks in preparation for registration
- Explaining what needs to be documented in the nursing records and provision of examples
- Reading through the students documentation and giving constructive developmental feedback
- Saying drug names and explanation of terms and abbreviations to help with comprehension and pronunciation

Value of the research

10. How valuable is the research?

The researcher does not make use of *in vivo* quotation to support her findings and this raises questions on the trustworthiness of the reported findings. There were also missed opportunities in the article to thoroughly discuss the findings claimed with the published research within the preceding research that I have critiqued in my portfolio. It was not shown which participating group within the case study the findings were sourced from. For examples it was not shown whether the mentors supported findings from the students or the academic and disability support staff's view of practice placement support differed from the students and mentors experiences. The researcher states that 11 students was a small sample and that the particular geographical area limits the generalisability of the study findings. Where arguably 11 students plus the other group members was a large sample of participants for a qualitative methodology and the researcher does not enlighten her readers on any geographical or demographic details to enable their own consideration of these in the transferability of findings. The researcher does not make any recommendations for further research but does recommend that placement staff training should include instruction on supporting students with SpLD. The case study was not described in sufficient detail to enable replication.

11.6 Thesis Gantt chart:

Activity:	08/11	01/12	03/12	06/15	01/16	09/16	01/17	03/17	05/17	08/17	11/17	06/18	10/18
Literature search and reading	x	x	x	x	x	x	x	x	x				
RES2C & UREC & Head of Department permissions	x		x										
Liaise with DDS for questionnaire administration		x	x	x	x	x							
Survey questionnaire completion (aim for 30 - 40 participants)		x	x	x	x	x							
Recruit & interview 8 students				x	x								
SPSS 20 data processing & transcribe interviews & NVivo 10® organisation of data				x	x	x	x	x	x				
Member checks with interview participants					x	x							
Analysis of results & make sense of questionnaire & interview findings			x	x	x	x	x	x	x	x			
Analyse study findings with literature, synthesis of new knowledge								x	x	x			
Thesis report following LSBU regulations with supervision & 2,000 personal statement						x	x	x	x	x			
Edit spell check drafts, final print & bind & hand in										x			
Marking by 2 examiners/moderation/external & prepare for <i>Viva Voce</i> examination											x		
<i>Viva Voce</i> @ in/external examiners & amendments											x		
Marking of revisions & Exam Board Award												x	
Graduation ☺													x
Disseminate findings by publishing professional journal articles & speaking at conferences by end 2020													